

MARKUS WERKMEISTER
UNTERNEHMENS- UND IT-BERATUNG

ZERTIFIZIERUNGEN UND TRAININGSNACHWEISE ENTERPRISE ARCHITECTURE,
KÜNSTLICHE INTELLIGENZ (AI/KI), BIG DATA, DATA SCIENCE, SAP

MARKUS WERKMEISTER

DATUM	:	01. Februar 2025
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1 Enterprise Architecture (Business and Technology)

1.1 Business Process and Decision Modeling BPMN & DMN (2016)



Record of Achievement

Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

has participated in the following openHPI course:

Business Process and Decision Modeling

by Prof. Dr. Mathias Weske

The course covered the following topics:

- Fundamentals of Business Process Management
- Basic Business Process Modeling
- Analyzing the Behaviour of Process Models
- Advanced Business Process Modeling
- Data in Business Process Modeling
- Business Decision Modeling

Total result (Homework and Final Exam)

156 out of 180 possible points (87%)

Dr. Christop Meinel

Prof. Dr. Christoph Meinel
Head of openHPI

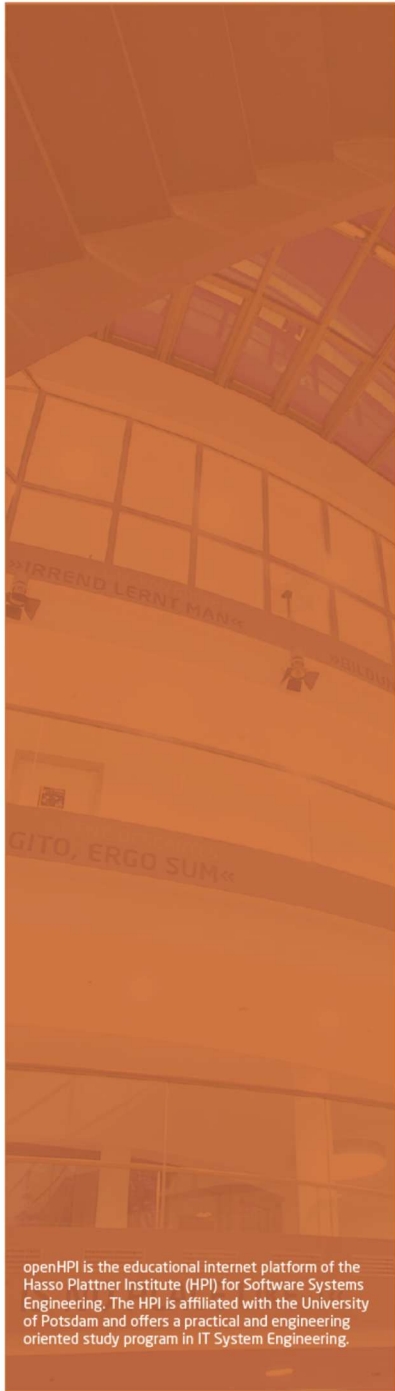
M. Weske

Prof. Dr. Mathias Weske
Course instructor

Potsdam, June 3, 2016

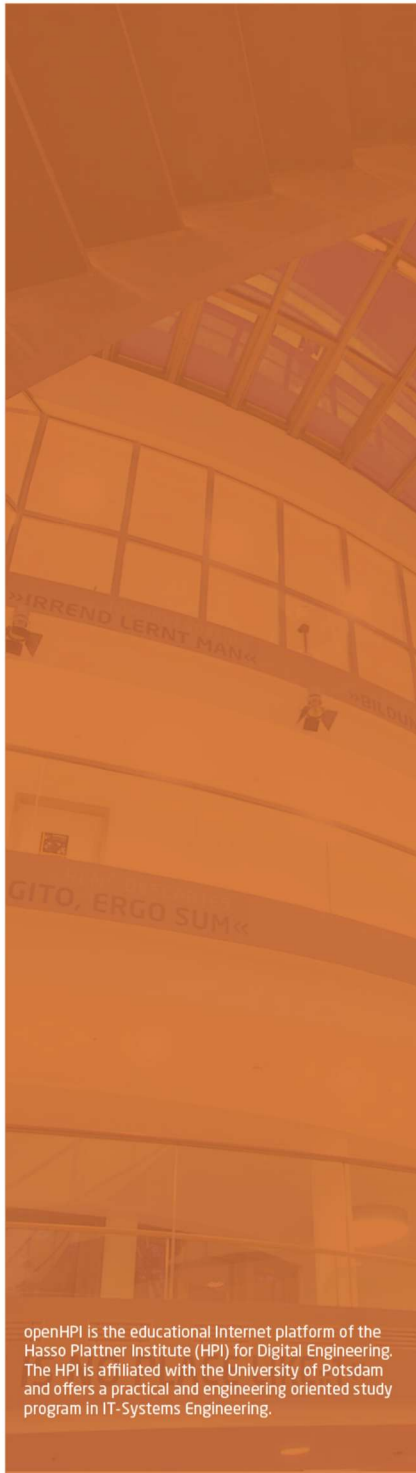


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openHPI is the educational internet platform of the Hasso Plattner Institute (HPI) for Software Systems Engineering. The HPI is affiliated with the University of Potsdam and offers a practical and engineering oriented study program in IT System Engineering.

1.2 Business Processes Modeling, Simulation, Execution (2019)



openHPI is the educational Internet platform of the Hasso Plattner Institute (HPI) for Digital Engineering. The HPI is affiliated with the University of Potsdam and offers a practical and engineering oriented study program in IT-Systems Engineering.

Record of Achievement

Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

has successfully completed the following openHPI course:

Business Processes: Modeling, Simulation, Execution

von Prof. Dr. Mathias Weske

The course covered the following topics:

- Business Process Management and Modeling
- Decision Management and Modeling
- Process Analysis and Simulation
- Process Implementation and Execution

Total Result (Assignments and Final Exam)

168.0 out of 208.0 possible points (80.8%)

M. Weske
Prof. Dr. Mathias Weske

Dr. Meinel
Prof. Dr. Christoph Meinel
openHPI Direktor



Potsdam, 8th of July 2019

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1.3 Drive SAP S/4HANA Transformations with SAP Signavio Solutions (openSAP, 2023)

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Drive SAP S/4HANA Transformations with SAP Signavio Solutions

Instructors: Experts from SAP Signavio Solutions

This six-week online course was held from June 13 through August 2, 2023. It comprised 2-4 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction to Business Transformation with SAP
- Business Process Management Fundamentals
- Analyze and Enhance Your Processes
- Design Your Processes
- Implement and Enable Your Processes
- Continuous Improvement and Enhanced Analytics

Maximum score possible for this course: 270 points.

The candidate scored 250.1 points (92.6%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.



Maxwell Wessel
Chief Learning Officer,
SAP Learning



Rouven Morato
General Manager,
SAP Signavio

Walldorf, Germany, July 25, 2023



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openSAP
open.sap.com

1.4 Transform Your Business Processes with SAP Signavio and SAP Build (openSAP 2024)



Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Transform Your Business Processes with SAP Signavio and SAP Build

Instructors: SAP Partner Ecosystem Success team: Eddy Neveux, Trinidad Martinez, Amine Mabrouk, and Krisztian Papai.

This four-week online course was held from April 16 through May 22, 2024. It comprised 1-3 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction & SAP Signavio
- SAP Build Process Automation
- Graph
- SAP Build Apps

Maximum score possible for this course: 240 points.

The candidate scored 212.0 points (88.3%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.

Eva Hett
 Head of Content Production,
 openSAP

Gianluigi Bagnoli
 Global Vice President
 of SAP BTP Solution Architects

Walldorf, Germany, May 14, 2024



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1.5 Process Mining (openHPI, 2021)



Record of Achievement

Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

has successfully completed the following openHPI course:

A Step-by-Step Introduction to Process Mining

by Prof. Dr. Mathias Weske and Prof. Dr. Henrik Leopold

The 2-week course covered the following topics:

- Fundamentals of process mining
- Event data extraction and event log generation
- Basic principles of process discovery and enhancement
- Quality dimensions in process mining
- Basic principles of conformance checking
- Data-driven decision mining and time prediction

Total Result (Assignments and Final Exam)

27.0 out of 30.0 possible points (90.0%)
 Is part of the top 20% active course participants.

Prof. Dr. Christoph Meinel
Head of openHPI

Prof. Dr. Mathias Weske
Course Instructor

Prof. Dr. Henrik Leopold
Course Instructor

openHPI is the educational Internet platform of the Hasso Plattner Institute (HPI) for Digital Engineering. The HPI is affiliated with the University of Potsdam and offers a practical and engineering oriented study program in IT-Systems Engineering.

Potsdam, May 14, 2021

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1.6 Enterprise Architect's View on SAP Business Technology (2021, EA2)

THE BEST RUN 

Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
An Enterprise Architect's View on SAP Business Technology Platform

Instructor: Holger Seubert

This three-week online course was held from February 2 through March 3, 2021. It comprised 3-4 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introducing Enterprise Architecture
- How to Guide Innovation to Business
- Working with SAP BTP as an Architect

Maximum score possible for this course: 180 points.

The candidate scored 174.0 points (96.7%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.



Michaela Laemmler
Head of openSAP



Holger Seubert
Instructor

Walldorf, Germany, February 26, 2021



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1.7 SAP Enterprise Architecture Designer (2018, HSEAD1)

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Introduction to SAP Enterprise Architecture Designer

Instructors: Volker Saggau, Matt Creason, Axel Meier, Andreas Poth

This four-week online course was held from September 25 through October 31, 2018. It comprised 4-6 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Overview of SAP EA Designer
- Business Architecture
- Information Architecture
- Landscape and System Architecture

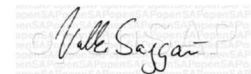
Maximum score possible for this course: 240 points.

The candidate scored 222.3 points (92.6%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.



Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation



Volker Saggau
Instructor

Waldorf, Germany, October 23, 2018



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openSAP
open.sap.com

1.8 SAP Integration Solution Advisory Methodology (2021, INT2)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

SAP Integration Solution Advisory Methodology

Instructors: Katrin von Ahsen, Ivo Droesser

This four-week online course was held from February 15 through March 23, 2021. It comprised 3-4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Assess Your Integration Strategy
- Design Your Hybrid Integration Platform
- Define Integration Best Practices
- Enable a Practice of Empowerment

Maximum score possible for this course: 240 points.

The candidate scored 215.7 points (89.9%) by working on weekly assignments and taking a final exam.

Michaela Laemmler
Head of openSAP

Katrin von Ahsen
Instructor

Ivo Droesser
Instructor

Walldorf, Germany, March 15, 2021



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1.9 Efficient DevOps with SAP (2021, DEVOPS1)

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Efficient DevOps with SAP

Featuring experts from a cross-functional team from different areas inside SAP

This five-week online course was held from April 19 through June 1, 2021. It comprised 4-5 hours of learning effort per week, 5 weekly assignments, and 1 final exam.

The course covered the following topics:

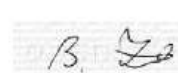
- Introduction to DevOps
- CI/CD with ABAP (On-Premise)
- Delivery of Cloud Applications
- Hybrid Change and Test Management
- Operation of Your Solution and Summary

Maximum score possible for this course: 300 points.

The candidate scored 260.0 points (86.7%) by working on weekly assignments and taking a final exam.



Michaela Laemmle
Head of openSAP



Boris Zarske
Instructor



Dirk Lehmann
Instructor

Walldorf, Germany, May 25, 2021



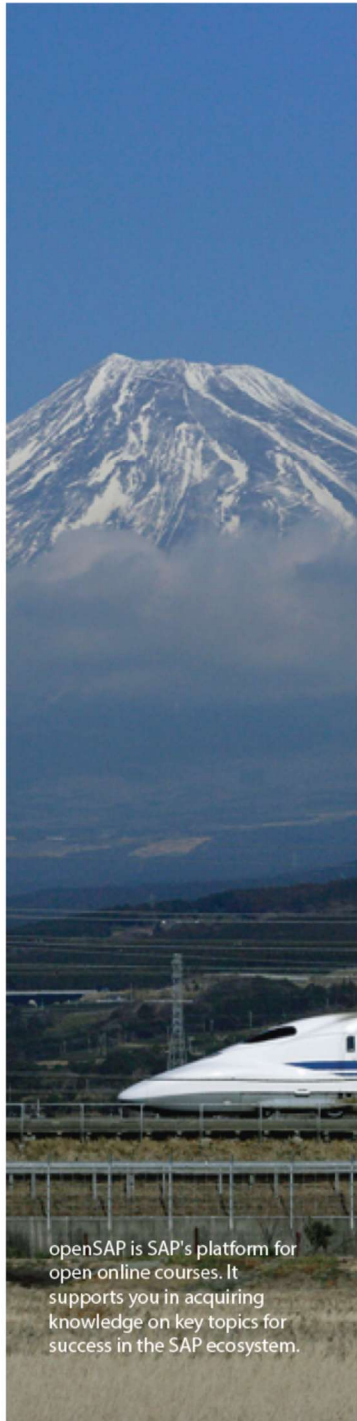
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1.10 Transformation to Hybrid Landscapes (Cloud & On-Premise, 2015)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Transformation to Hybrid Landscapes
Instructors: Rob Glickman, Dr. Volker Stiehl, Ümit Özdemir, Stefan Klostermann, and Maik Schmalstich

This five-week online course was held from July 2 through August 13, 2015 and covered the following topics:

- Introduction
- Best Practices for Integration
- Security
- Operations
- Transformation – Your Next Steps

Maximum score possible for this course: 300 points.

The candidate scored 276 points (92%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement and Transformation

Dr. Klaus Schmelzeisen
Global Head of Application & Technology
Services (ATS)

Walldorf, August 2015



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openSAP

2 Künstliche Intelligenz, Big Data, Data Science, Blockchain, Digital Health

2.1 Große Sprachmodelle entwickeln, feintunen und einsetzen (2024)



Teilnahmezertifikat

Große Sprachmodelle entwickeln, feintunen und einsetzen

Hiermit bestätigen wir

Markus Werkmeister

die erfolgreiche Teilnahme
an der Veranstaltung.

28.–30. Oktober 2024

3 Tage jeweils 8 Stunden

Im Rahmen des Workshops wurden folgende Lerninhalte vermittelt:

- Einführung in das Deep Learning Framework PyTorch (mit Praxisübungen)
- Einführung in große Sprachmodelle und Bilderkennungsmodelle
- Training eines Modells für die Bilderkennung
- Training eines großen Sprachmodells from scratch mittels eines Demo Use-Case
- Feintuning eines großen Sprachmodells
- Weitere Trainingsmöglichkeiten wie Reinforcement Learning from Human Feedback (RLHF)
- Nutzung von vortrainierten Modellen der KI-Plattform Hugging Face
- Möglichkeiten und Risiken von Deep-Learning-Modellen



Janine Rumrich,
Head of Events

30.10.2024

Heise Medien
GmbH & Co. KG

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30625 Hannover
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E aboservice@heise-academy.de
W www.heise-academy.de

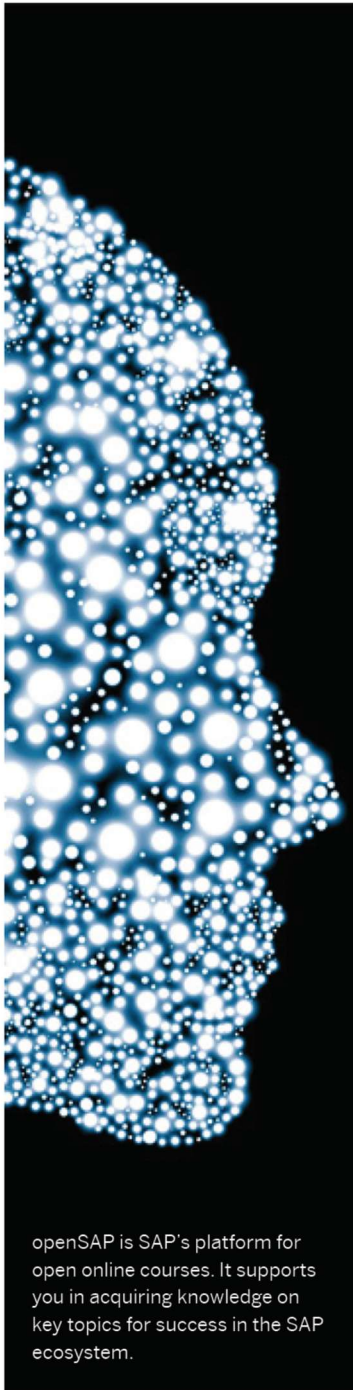
Registergericht Hannover HRA 26709
Pers. haftende Gesellschafterin
Heise Medien Geschäftsführung GmbH
Registergericht Hannover HRB 60405
Geschäftsführung
Ansgar Heise · Beate Gerold

Postbank Hannover
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BIC PBNKDEFF
USt-IdNr. DE 813 501 887
St.-Nr. 25/215/03805

2.2 ML2 - Enterprise Deep Learning with TensorFlow (2017)



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Enterprise Deep Learning with TensorFlow

SAP experts featuring special guests from JP Morgan Chase, NVIDIA, Google, and others

This six-week online course was held from October 23 through December 12, 2017. It comprised 3-4 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Getting Started with Deep Learning
- Building TensorFlow Applications
- Deep Networks and Sequence Models
- Convolutional Networks
- Industry Applications of Deep Learning
- Advanced Deep Learning Topics

Maximum score possible for this course: 360 points.

The candidate scored 338.5 points (94.0%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Daniel Dahlmeier
Instructor

Walldorf, Germany, December 9, 2017



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open.sap.com

2.3 Deep Learning for Computer Vision with Keras & TensorFlow (2020)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat erfolgreich bestanden:

Praktische Einführung in Deep Learning für Computer Vision

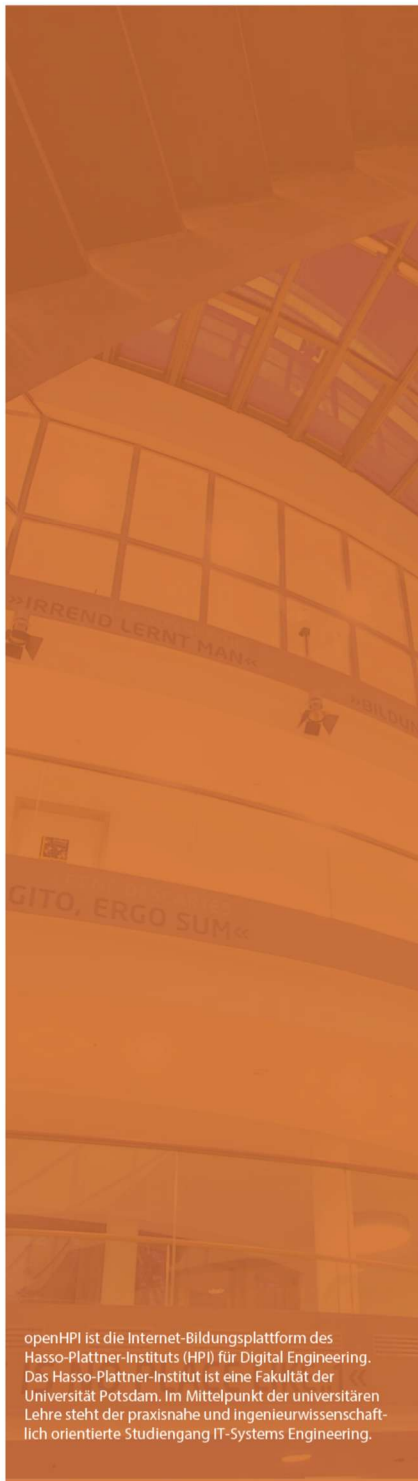
von Roman Dahm, Georg Lange, Hendrik Patzlaff, Leonard Petter und Benedikt Schenkel

Der vierwöchige Kurs bestand aus den folgenden Inhalten:

- Grundlegendes Verständnis von Machine Learning bzw. neuronalen Netzen
- Kennenlernen der notwendigen Werkzeuge (Numpy, Matplotlib, TensorFlow und Keras)
- Implementierung eines neuronalen Netzes
- Möglichkeit zur Anpassung der Netze an höhere Anforderungen (größere Bilder, weniger Bilder)
- Komplexe Layerstrukturen - Einführung in Deep Learning
- Optimierung der Netze zum Erreichen einer besseren Accuracy
- Einführung in die selbständige Anwendung auf eigene (CV) Probleme

Gesamtergebnis (Bewertete Hausaufgaben)

66.5 von 100.0 möglichen Punkten (66.5%)



openHPI ist die Internet-Bildungsplattform des Hasso-Plattner-Instituts (HPI) für Digital Engineering. Das Hasso-Plattner-Institut ist eine Fakultät der Universität Potsdam. Im Mittelpunkt der universitären Lehre steht der praxisnahe und ingenieurwissenschaftlich orientierte Studiengang IT-Systems Engineering.

Potsdam, 13. April 2020

Online Verifizierung: <https://open.hpi.de/verify/xeges-fepen-kybyk-rimop-goruf>



2.4 Künstliche Intelligenz und maschinelles Lernen (2020)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat den folgenden openHPI-Kurs erfolgreich bestanden:

Künstliche Intelligenz und maschinelles Lernen für Einsteiger

von Johannes Hötter, Christian Warmuth

Der vierwöchige Kurs bestand aus den folgenden Inhalten:

- Differenzierung von herkömmlicher Programmierung und selbstlernenden Programmen
- Abgrenzung von Fachbegriffen im Bereich künstliche Intelligenz
- Zentrale Konzepte und Modelle im Machine Learning
- Fokus auf Modelle und Techniken im Supervised Learning
- Chancen und Risiken sowie Ethik und Moral beim Einsatz von künstlicher Intelligenz

Gesamtergebnis (Bewertete Programmier- und Hausaufgaben)

111.0 von 120.0 möglichen Punkten (92.5%)

Ch. Meinel
 Prof. Dr. Christoph Meinel
 openHPI Direktor

J. Hötter
 Johannes Hötter
 Dozent

C. Warmuth
 Christian Warmuth
 Dozent



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Potsdam, 2. Oktober 2020

Online Verifizierung: <https://open.hpi.de/verify/xokap-hydif-bupez-zetin-nynyc>



2.5 Künstliche Intelligenz und Maschinelles Lernen in der Praxis (2021)



Markus Werkmeister

markus@werkmeister.com
geboren am: 26. März 1969

Künstliche Intelligenz und Maschinelles Lernen in der Praxis

Kursleitung: Johannes Hötter und Christian Warmuth (Masterstudenten)

Laufzeit: 06.10.2021 - 03.11.2021	Prüfung: 4 wöchentliche Prüfungen,
Sprache: Deutsch	1 Abschlussprüfung (Multiple Choice)
Lehrform: Online-Kurs	

Kursthemen:

- Vertiefung der Fachbegriffe und Konzepte im Bereich künstliche Intelligenz und maschinelles Lernen
- Verständnis der zentralen Schritte in KI-/ML-Projekten (anhand des CRISP-DM Prozesses)
- Einblick in verschiedene Implementierungsansätze für KI-/ML-Anwendungen
- Aktuelle Forschungsgebiete und Trends im Machine Learning

Ergebnis:

112.3 von 120.0 möglichen Punkten (93.6%)

C. Warmuth *J. Hötter*
Prof. Dr. Christoph Warmuth, Dozent
Prof. Dr. Johannes Hötter, Dozent

C. Warmuth
Christian Warmuth
Dozent

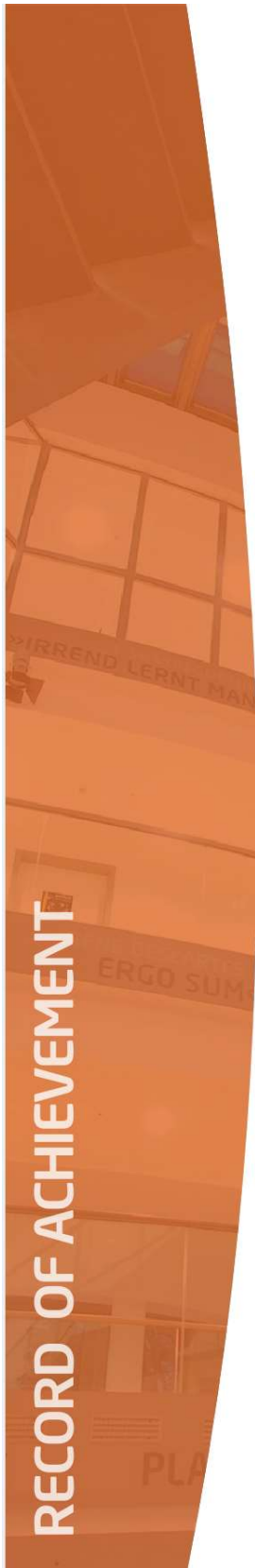
Potsdam, 29. Oktober 2021

Online Verifizierung: <https://open.hpi.de/verify/xiff-cacev-baheg-gycoc-samyh>



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2.6 Applied Edge AI: Deep Learning Outside of the Cloud (openHPI, 2022)



Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

Applied Edge AI: Deep Learning Outside of the Cloud

Teaching Team: PD Dr. Haojin Yang, Joseph Bethge

Duration:	07.09.2022 - 26.10.2022	Exam:	2 hours, 28 questions (multiple choice)
Language:	English		
Teaching form:	Online Course		

Course Topics:

- Basics and history of neural networks
- Model compression techniques
- Binary neural networks
- Advanced edge AI concepts
- Federated learning and collaborative inference
- Coding in PyTorch, BITorch, and KubeEdge/Sedna

Result:

80.1 out of 117.0 possible points (68.5%)

C. Meinel
Prof. Dr. Christoph Meinel
openHPI Director



H. Yang
PD Dr. Haojin Yang
Course Guidance

J. Bethge
Joseph Bethge
Course Guidance

Potsdam, October 20, 2022

Verify online: <https://open.hpi.de/verify/xivos-getut-vunod-ditus-cuzuh>



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2.7 ChatGPT Generative KI (openHPI, 2023)



Markus Werkmeister

markus@werkmeister.com

ChatGPT: Was bedeutet generative KI für unsere Gesellschaft?

Kursleitung: Johannes Hötter, Christian Warmuth

Laufzeit:	14.06.2023 - 12.07.2023	Prüfung:	4 Hausaufgaben je 15 Punkte (60 Punkte), jeweils 1 Stunde
Sprache:	Deutsch		
Lehrform:	Online-Kurs		

Kursthemen:

- Zentrale Begrifflichkeiten sowie die Funktionsweise von generativer KI
- Praktische Anwendungsfälle und Möglichkeiten von generativer KI
- Implikationen und Einschränkungen von generativer KI
- Aktuelle Forschungsgebiete und mögliche Auswirkungen auf Bereiche des täglichen Lebens

Ergebnis:

58,0 von 60,0 möglichen Punkten (96.7%)
 Dieses Ergebnis gehört zu den besten 10% in diesem Kurs.

C. Meinel
 Prof. Dr. Christoph Meinel
 openHPI Direktor

J. Hötter
 Johannes Hötter
 Dozent

C. Warmuth
 Christian Warmuth
 Dozent



Potsdam, 6. Juli 2023

Online Verifizierung: <https://open.hpi.de/verify/xecen-zodyl-malyd-fydih-tabym>

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2.8 Embeddings for Natural Language Processing (openHPI, 2023)



Markus Werkmeister

markus@werkmeister.com

Understanding **Embeddings for** Natural Language Processing

Teaching Team: Mario Tormo Romero, AI Service Center Team

Duration: 17.12.2023 - 30.06.2025
Language: English
Teaching form: Online Course

Course Topics:

- Importance of Embeddings for Natural Language Processing
- Tokenization
- Statistical Models like BoW and TF-IDF
- Embedding Metrics and Visualization
- Techniques for Static Embeddings like Word2Vec and GloVe
- Contextual Embeddings from models like BERT or SentenceTransformers
- Vector Databases: Overview and Applications

Potsdam, June 30, 2025

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CONFIRMATION OF PARTICIPATION

2.9 Generative AI at SAP (openSAP, 2023)



Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Generative AI at SAP

Instructors: Sean Kask, Hadi Hares, Jana Richter

This online course was held from November 14 through December 20, 2023 and comprised 2-3 hours of learning effort and 1 course assignment.

The course provided an overview about the value of different types of artificial intelligence (AI), including generative AI, and how to leverage AI capabilities within SAP products and solutions.

Maximum score possible for this course: 30 points.

The candidate scored 30.0 points (100.0%) by taking a course assignment.

Maxwell Wessel
Chief Learning Officer,
SAP Learning

Sean Kask
Chief AI Strategy Officer

Walldorf, Germany, November 15, 2023



Verify online: <https://open.sap.com/verify/xonas-ducyz-byvyr-sumur-cuduf>

openSAP
open.sap.com

2.10 Building AI and Sustainability Solutions on SAP BTP (openSAP, 2023)



Record of Achievement



Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Building AI and Sustainability Solutions on SAP BTP

Instructors: Yatsea Li, Alice Magnani, Cesare Calabria, Jacob Tan, Quintus Smith, Mostafa Sharaf

This five-week online course was held from February 20 through April 4, 2023. It comprised 2-3 hours of learning effort per week, 5 weekly assignments and 1 Final Exam.

The course covered the following topics:

- AI and Sustainability
- Enterprise AI in Action – Defect Detection
- Enterprise AI in Action – Sound-Based Predictive Maintenance
- Embedding AI into a Custom Application on SAP BTP
- Collaborative Enterprise Planning

Maximum score possible for this course: 300 points.

The candidate scored 222.9 points (74.3%) by working on weekly assignments and taking a final exam.

Maxwell Wessel
Chief Learning Officer,
SAP Learning

Gianluigi Bagnoli
Global VP,
BTP Solution Architects

2.11 Profitable AI (openHPI, 2024)



Markus Werkmeister

markus@werkmeister.com

Profitable AI

Teaching Team: Elizabeth Press

Duration:	09.12.2024 - 23.12.2024	Exam:	2 Homeworks, 35 questions (multiple choice)
Language:	English		
Teaching form:	Online Course		60 minutes per homework

Course Topics:

- Germany's Role in the Global AI Ecosystem
- Economic and Financial Implications of AI Adoption
- AI Integration alignment with Business Strategies
- Organizational Development and AI Deployment Frameworks
- Infrastructure for Scalable AI Implementation and Generative AI
- Ethical AI Practices and Data Literacy

Result:

48.7 out of 53.0 possible points (91.9%)
 Is part of the top 10% active course participants.

Ipsita Bhaduri
Course Manager openHPI

Elizabeth Press
Lecturer

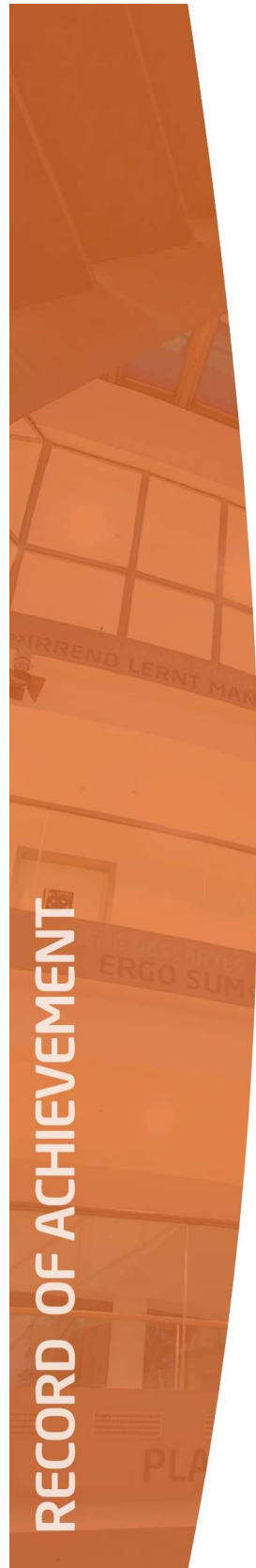
Design IT. Create Knowledge
HPI Hasso Plattner Institut
Digital Engineering
University of Potsdam



Potsdam, December 18, 2024

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2.12 Python Programmierkurs (openSAP / FH Aachen, 2022)

Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Python for Beginners

Instructors: Christian Drumm, Stephan Jacobs

This six-week online course (plus a preparation week) was held from April 5 through June 1, 2022.

It comprised 5-7 hours of learning effort per week, 6 weekly assignments, a final exam and practical programming exercises.

The course covered the following topics:

- Python Fundamentals
- Lists and Loops
- Complex Data Types
- Reading and Writing Data
- Functions
- Libraries

Maximum score possible for this course: 260 points.

The candidate scored 239.5 points (92.1%) by working on weekly assignments and taking a final exam.

Michaela Laemmler
Head of openSAP

Christian Drumm
Professor of Information
Systems, FH Aachen,
Germany

Stephan Jacobs
Professor of Information
Systems, FH Aachen,
Germany

Waldorf, Germany, May 25, 2022



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hosted by
openSAP
open.sap.com

FH AACHEN
UNIVERSITY OF APPLIED SCIENCES

2.13 Python schnell und intensiv Programmieren lernen (OpenHPI, 2024)



Markus Werkmeister

markus@werkmeister.com

Python - schnell und intensiv Programmieren lernen

Kursleitung: Berry Boessenkool

Laufzeit: 02.10.2024 - 29.10.2024 **Prüfung:** 4 Hausaufgaben (Multiple Choice) und 14 benotete Programmieraufgaben
Sprache: Deutsch
Lehrform: Online-Kurs

Kursthemen:

- Syntax, Datentypen, Module und Dateien importieren, Zeichenketten
- eigene Funktionen definieren, Scoping
- Objekttypen, besonders Listen und Dictionaries
- Bedingungen, for + while Schleifen, List/Dict Comprehension, mapping
- Fehlermanagement (try-except-finally), Klassen, Exkurs Unit Tests

Ergebnis:

115.0 von 117.0 möglichen Punkten (98.3%)

Ipsita Bhaduri
Kurs-Managerin openHPI

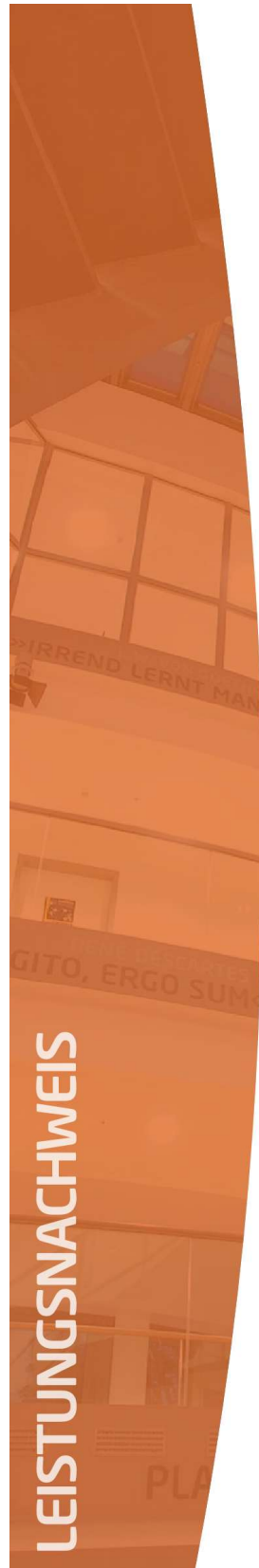
Berry Boessenkool
Dozent

Potsdam, 23. Oktober 2024

Online Verifizierung: <https://open.hpi.de/verify/xolak-nusot-camoh-rameb-vilog>



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2.14 Linked Data Engineering / Semantic Web (2016)



Record of Achievement

Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

has participated in the following openHPI course:

Linked Data Engineering

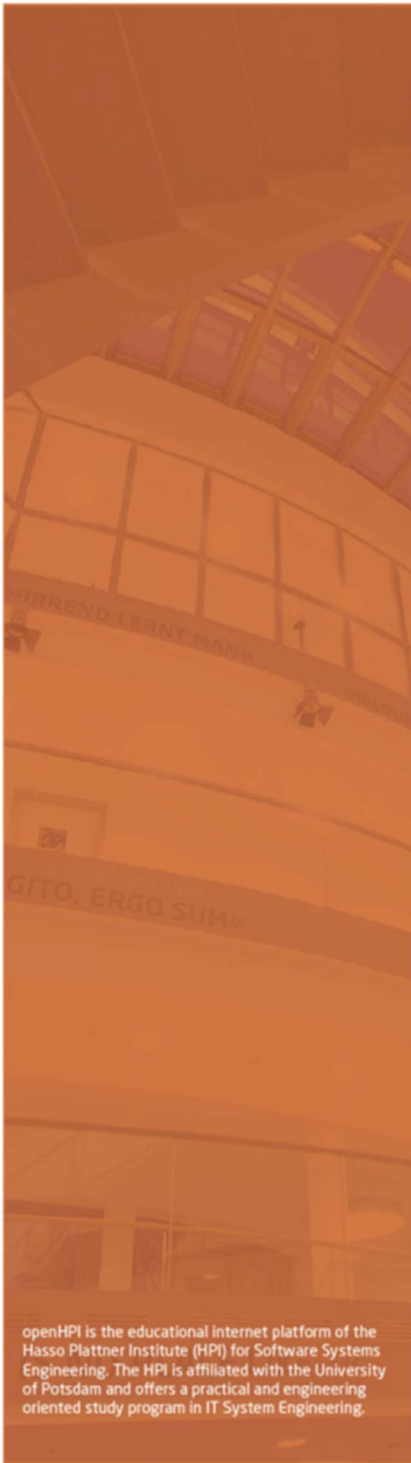
by Prof. Dr. Harald Sack

The course covered the following topics:

- Foundations of Semantic Web Technologies
- Knowledge Representation with RDF(S) and OWL
- Linked Data Vocabularies and Ontologies
- The SPARQL Query Language
- Linked Data Publishing and Application Programming
- Advanced Linked Data Applications

Total result (Homework and Final Exam)

144 out of 180 possible points (80%)



openHPI is the educational internet platform of the Hasso Plattner Institute (HPI) for Software Systems Engineering. The HPI is affiliated with the University of Potsdam and offers a practical and engineering oriented study program in IT System Engineering.

Prof. Dr. Christoph Meinel
Head of openHPI

Prof. Dr. Harald Sack
Course Instructor

Potsdam, December 19, 2016



Verify online: <https://open.hpi.de/verify/xovit-dirab-zovem-clpik-naten>

2.15 Information Service Engineering (2018)



Record of Achievement

Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

has participated in the following openHPI course:

Information Service Engineering

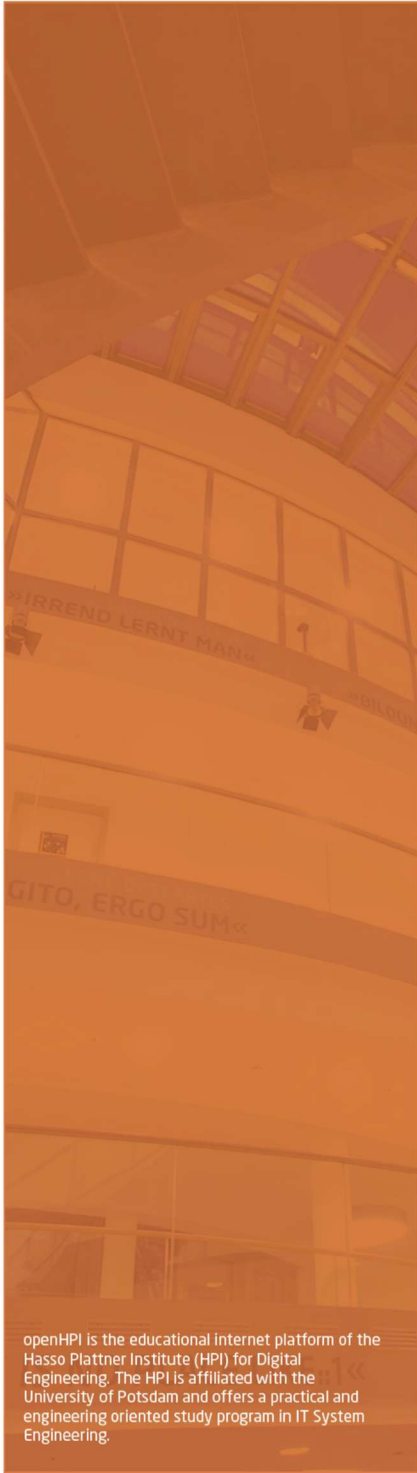
by Prof. Dr. Harald Sack and Dr. Maria Koutraki

The course covered the following topics:

- Basic Methods of Natural Language Processing
- Semantic Web Technologies and Linked Data Engineering
- Basic Machine Learning Algorithms
- Knowledge Engineering and Data Analytics

Total result (Homework and Final Exam)

154.8 out of 180.0 possible points (86.0%)



Prof. Dr. Christoph Meinel
 Prof. Dr. Christoph Meinel
 Head of openHPI

Prof. Dr. Harald Sack
 Prof. Dr. Harald Sack
 Course Instructor

Potsdam, June 18, 2018



Dr. Maria Koutraki
 Dr. Maria Koutraki
 Course Instructor



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2.16 Knowledge Graphs (2023)



Markus Werkmeister

markus@werkmeister.com

Knowledge Graphs - Foundations and Applications

Teaching Team: Prof. Dr. Harald Sack

Duration:	11.10.2023 - 22.11.2023	Exam:	6 graded homework assignments, 1 final exam
Language:	English		(multiple choice)
Teaching form:	Online Course		

Course Topics:

- Knowledge Representation & Knowledge Graphs
- Semantic Web Technology Stack
- Ontologies and Ontological Engineering
- Knowledge Graph Construction
- Language Models and Knowledge Graph Embeddings
- Knowledge Graph Applications

Result:

124.8 out of 180.0 possible points (69.3%)

Prof. Dr. Christoph Meinel
openHPI Director

Prof. Dr. Harald Sack
Course Guidance

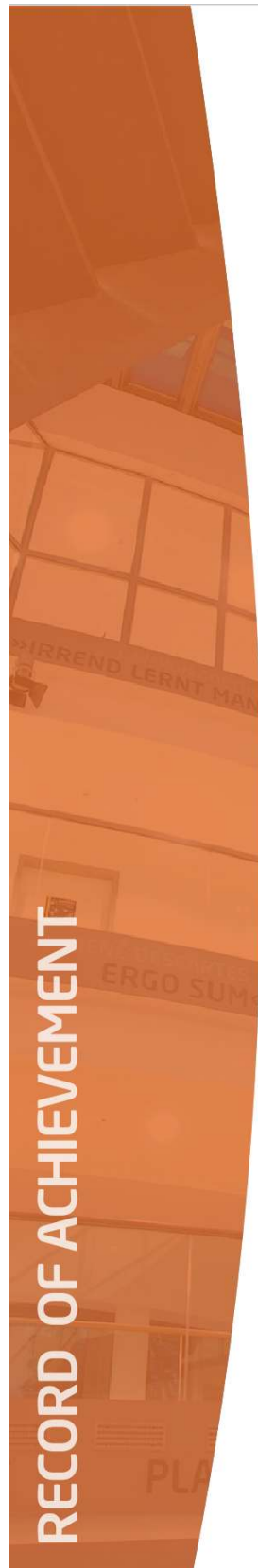


Potsdam, November 17, 2023

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2.17 Data Engineering und Data Science (2020)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat erfolgreich den sechswöchigen Kurs bestanden:

Data Engineering und Data Science- Klarheit in den Schlagwort-Dschungel

von Prof. Dr. Felix Naumann

Der Kurs bestand aus den folgenden Einheiten

- Big Data und Data Science
- Skalierbares Datenmanagement
- Datenaufbereitung
- Informationsintegration
- Data Mining
- Text Mining
- Machine Learning

Gesamtergebnis

173.0 von 180.0 möglichen Punkten (96.1%)
 Der Teilnehmer gehört zu den besten 20% dieses Kurses

Ch. Meinel *F. Naumann*

Prof. Dr. Christoph Meinel
openHPI Direktor

Prof. Dr. Felix Naumann
Dozent



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Potsdam, 19. Februar 2020

Online Verifizierung: <https://open.hpi.de/verify/xivog-sacod-pifud-soryz-huryh>



2.18 Zukunftstechnologien 2023: KI, Blockchain, IoT (openHPI 2023)



Markus Werkmeister

markus@werkmeister.com

Blick hinter den Hype: Aktuelle Entwicklungen rund um KI, Blockchain und IoT

Kursleitung: Prof. Dr. Christoph Meinel

Laufzeit:	30.08.2023 - 10.10.2023	Prüfung:	6 bewertete wöchentliche Hausaufgaben,
Sprache:	Deutsch		1 Abschlussklausur (Multiple Choice)
Lehrform:	Online-Kurs		

Kursthemen:

- Geräte, Protokolle und Anwendungsbeispiele des IoT
- Grundbegriffe der Künstlichen Intelligenz und des Maschinellen Lernens
- Deep Learning, Neuronale Netze und Anwendungsbeispiele von KI
- Verteilte Systeme und Vertrauensmodelle
- Konsistenzalgorithmen und Fehlermodelle in verteilten Systemen
- Anwendungsbeispiele verteilter Systeme: Bitcoin, Ethereum und SSI

Ergebnis:

176.0 von 180.0 möglichen Punkten (97.8%)

Dieses Ergebnis gehört zu den besten 5% in diesem Kurs.

Ch. Meinel
Prof. Dr. Christoph Meinel
openHPI Direktor

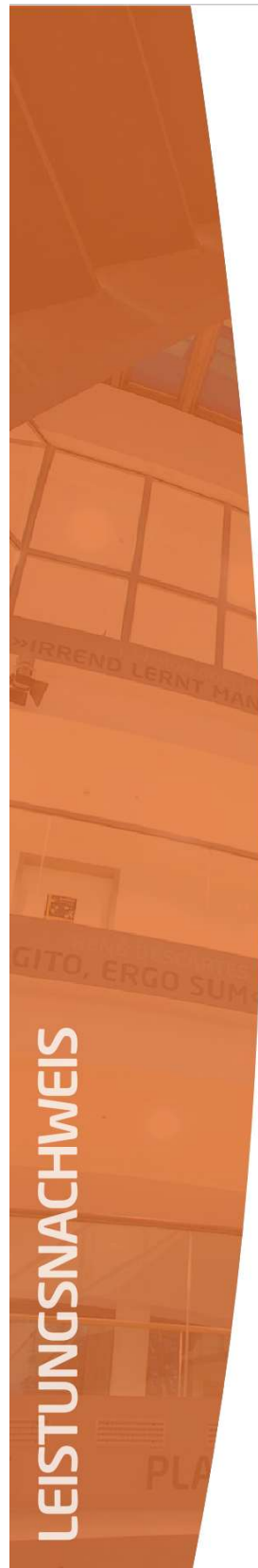


Potsdam, 11. Oktober 2023

Online Verifizierung: <https://open.hpi.de/verify/xukor-kuzyv-bazil-tepik-bytet>



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2.19 Digital Health für Einsteiger (openHPI 2020)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat den folgenden openHPI-Kurs erfolgreich bestanden:

Digital Health für Einsteiger

von Prof. Dr. Erwin Böttinger, Prof. Dr. Bert Arnrich und Prof. Dr. Christoph Lippert

Der zweiwöchige Kurs bestand aus den folgenden Inhalten:

- Digitale Gesundheitsdatensysteme & Elektronische Gesundheitsakten
- Prädiktive, präventive und personalisierte Medizin
- Connected Healthcare: Smartwatches und andere Gesundheitssensoren
- Sammlung gesundheitsrelevanter Daten im Alltag
- Grundlagen der Künstlichen Intelligenz in der Medizin
- Maschinelles Lernen & Deep Learning
- Risikofaktoren in der Künstlichen Intelligenz

Gesamtergebnis (Bewertete Hausaufgaben)

26.3 von 30.0 möglichen Punkten (87.7%)

Prof. Dr. Christoph Meinel
openHPI Direktor

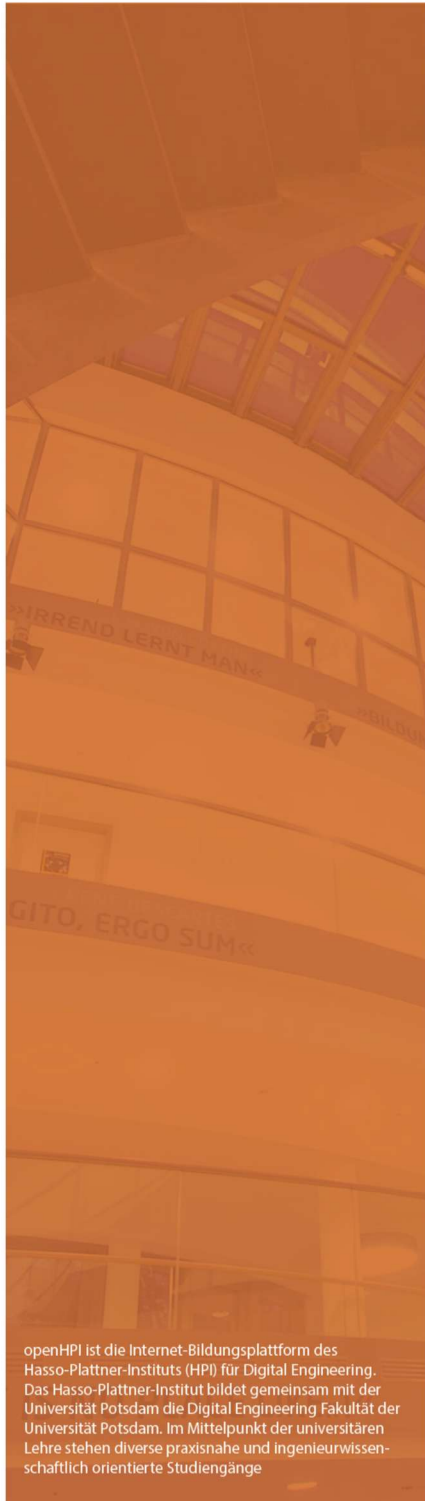
Prof. Dr. Erwin Böttinger
Dozent

Prof. Dr. Bert Arnrich
Dozent

Prof. Dr. Christoph Lippert
Dozent

Potsdam, 30. September 2020

Online Verifizierung: <https://open.hpi.de/verify/xolif-biret-femes-losus-tamyt>



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2.20 Connected Healthcare: Gesundheitsdaten erfassen und analysieren (2021)



Markus Werkmeister

markus@werkmeister.com
geboren am: 26. März 1969

Connected Healthcare: Gesundheitsdaten im Alltag erfassen und analysieren

Kursleitung: Prof. Dr. Bert Arnrich

Laufzeit: 13.10.2021 - 27.10.2021 **Prüfung:** 1 Abschlussprüfung (Multiple Choice)
Sprache: Deutsch
Lehrform: Online-Kurs

Kursthemen:

- Einführung zu tragbaren Sensoren
- Überblick zu automatischer Aktivitätserkennung
- Unterstützung bei psychischen Erkrankungen mit neuen Technologien
- Einführung Analyse von Bewegung und Gang mit Sensoren und Kameras
- Einführung Erkennung von Emotionen und in die Sprach-Analyse
- Einführung Künstliche Intelligenz auf der Intensivstation
- Einblicke in verteiltes Lernen

Ergebnis:

20.0 von 22.0 möglichen Punkten (90.9%)

Ch. Meinel *Bert Arnrich*
 Prof. Dr. Christoph Meinel Prof. Dr. Bert Arnrich
 openHPI Direktor Dozent



Potsdam, 20. Oktober 2021

Online Verifizierung: <https://open.hpi.de/verify/xizem-nydoc-kyrel-fyreb-hefv>



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LEISTUNGSNACHWEIS

2.21 Digitale Medizin - Was ist ethisch verantwortbar (2024)



Markus Werkmeister

markus@werkmeister.com

Digitale Medizin - Was ist ethisch verantwortbar?

Kursleitung: Prof. Dr. Robert Ranisch, Dr. Joschka Haltaufderheide

Laufzeit: 04.09.2024 - 16.10.2024 **Prüfung:** 2 Stunden,
Sprache: Deutsch 35 Fragen (Multiple
Lehrform: Online-Kurs Choice)

Kursthemen:

- Einführung in die Grundlagen der digitalen Gesundheitsethik
- Ethische Fragen medizinischer Entscheidungen mit Künstlicher Intelligenz
- Gerechtigkeit und Big Data in der Medizin
- mHealth, Autonomie und Privatheit in der Medizin
- Ethische Dimensionen robotischer Systeme im Gesundheitswesen


Ergebnis:

148.5 von 155.0 möglichen Punkten (95.8%)

Dieses Ergebnis gehört zu den besten 5% in diesem Kurs.


Ipsita Bhaduri
Kurs-Managerin openHPI




Prof. Dr. Robert Ranisch
Dozent


Dr. Joschka Haltaufderheide
Dozent



Potsdam, 9. Oktober 2024

Online Verifizierung: <https://open.hpi.de/verify/xupid-hokap-teput-vapuz-zidaz>

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2.22 BIG1 - Driving Business Results with Big Data (HANA SPS10)



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Driving Business Results with Big Data
Instructor: Miklos Szorenyi

This five-week online course was held from June 23 through August 4, 2015 and covered the following topics:

- Introduction to Big Data
- Big Data Solutions
- Big Data Intelligence
- Predictive Analytics on Big Data
- Marketing with Big Data

Maximum score possible for this course: 300 points.

The candidate scored 283 points (94%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement & Transformation

Miklos Szorenyi
Instructor

Walldorf, August 2015

openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.



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2.23 DSO - Statistics for Data Science (2019)

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Introduction to Statistics for Data Science

Instructors: Stuart Clarke, Michael Jordan

This six-week online course was held from October 08 through November 27, 2019. It comprised 3-4 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction to Statistics
- Descriptive Statistics
- Correlation and Linear Regression
- Introduction to Probability
- Probability Distributions
- Connecting to Your SAP Solutions

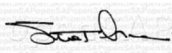
Maximum score possible for this course: 360 points.

The candidate scored 337.5 points (93.8%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.



Michaela Laemmler
Head of openSAP



Stuart Clarke
Instructor



Michael Jordan
Instructor

Walldorf, Germany, November 19, 2019



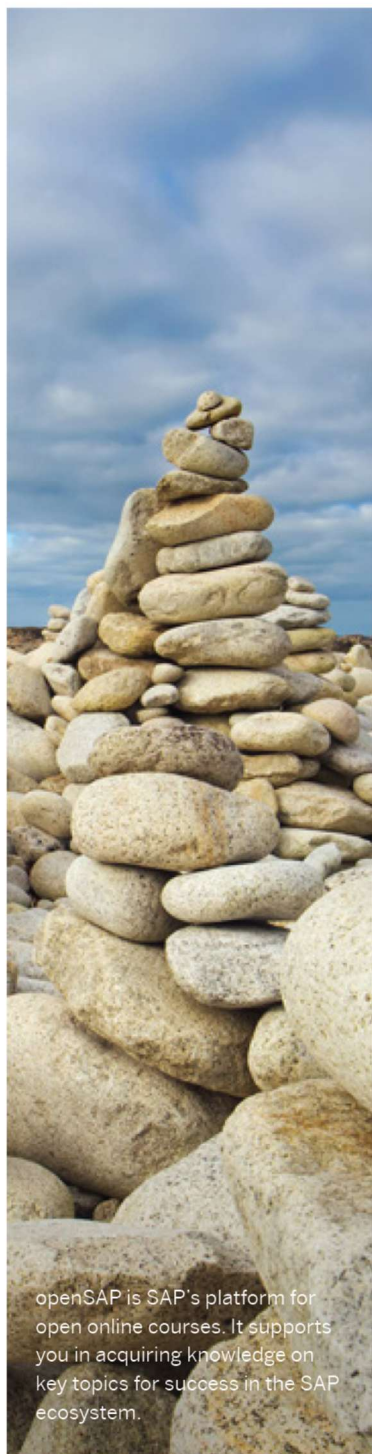
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2.24 DS1 - Getting Started with Data Science (2017)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Getting Started with Data Science
Instructor: Stuart Clarke

This six-week online course was held from February 1 through March 23, 2017. It comprised 3-4 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Business & Data Understanding
- Data Preparation
- Modeling (1)
- Modeling (2)
- Evaluation
- Deployment & Maintenance

Maximum score possible for this course: 360 points.

The candidate scored 323 points (90%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Stuart Clarke
Instructor

Walldorf, March 19, 2017



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open.sap.com

2.25 DS2 - Data Science in Action - Building a Predictive Churn Model (2017)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Data Science in Action - Building a Predictive Churn Model

Instructor: Stuart Clarke

This four-week online course was held from November 8 through December 14, 2017. It comprised 3-4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Case Study Introduction
- Prepare and Encode Data
- Develop, Evaluate, and Deploy Models
- Monitor Models and Improve Performance

Maximum score possible for this course: 240 points.

The candidate scored 239.0 points (99.6%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Stuart Clarke
Instructor

Walldorf, Germany, December 10, 2017



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2.26 Data Science Bootcamp (openHPI, 2023)



Markus Werkmeister

markus@werkmeister.com

Data Science Bootcamp

Teaching Team: Mohamed Elhayany, Hendrik Steinbeck

Duration:	07.06.2023 - 16.07.2023	Exam:	1,5 hours, 42 questions
Language:	English		(multiple choice)
Teaching form:	Online Course		

Course Topics:

- Intro to data science and visualization
- EDA and statistical analysis
- Data cleaning and preprocessing
- Machine learning

Result:

134.0 out of 173.0 possible points (77.5%)

C. Meinel
 Prof. Dr. Christoph Meinel
 openHPI Director

M. Elhayany
 Mohamed Elhayany
 Course Guidance

H. Steinbeck
 Hendrik Steinbeck
 Course Guidance



Potsdam, June 28, 2023

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openHPI is the education platform of the Hasso Plattner Institute (HPI) for Digital Engineering. Together with the University of Potsdam, the Hasso Plattner Institute forms the Digital Engineering Faculty of the University of Potsdam. The university's teaching focuses on a variety of practical and engineering-oriented study programs.



2.27 HANA10 - Build Intelligent Data Apps with SAPHANA Cloud Multi-Model (2023)



Record of Achievement



Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Build Intelligent Data Apps with SAP HANA Cloud Multi-Model

Instructor: Markus Fath

This online course was held from November 6 through December 5, 2023 and comprised 3-4 hours of learning effort and 1 course assignment.

The course provides an overview to the multi-model features in SAP HANA Cloud, including the Document Store and working with JSON data, the Spatial engine and processing geo-referenced data, as well as the Graph engine and analyzing connected data.

Maximum score possible for this course: 30 points.

The candidate scored 30.0 points (100.0%) by taking a course assignment.

Maxwell Wessel
Chief Learning Officer,
SAP Learning

Markus Fath
Development Architect,
HANA Multi-Model

Walldorf, Germany, November 7, 2023



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2.28 HSTA1 - Text Analytics with SAP HANA Platform (2016)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Text Analytics with SAP HANA Platform

Instructor: Anthony Waite

This four-week online course was held from January 19 through February 24, 2016. It comprised 4-6 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Overview: Text in SAP HANA Platform
- Text Analysis: Entity Extraction
- Text Analysis: Relationship Extraction
- Text Mining

Maximum score possible for this course: 240 points.

The candidate scored 230 points (96%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement & Transformation

Anthony Waite
Instructor

Walldorf, February 2016



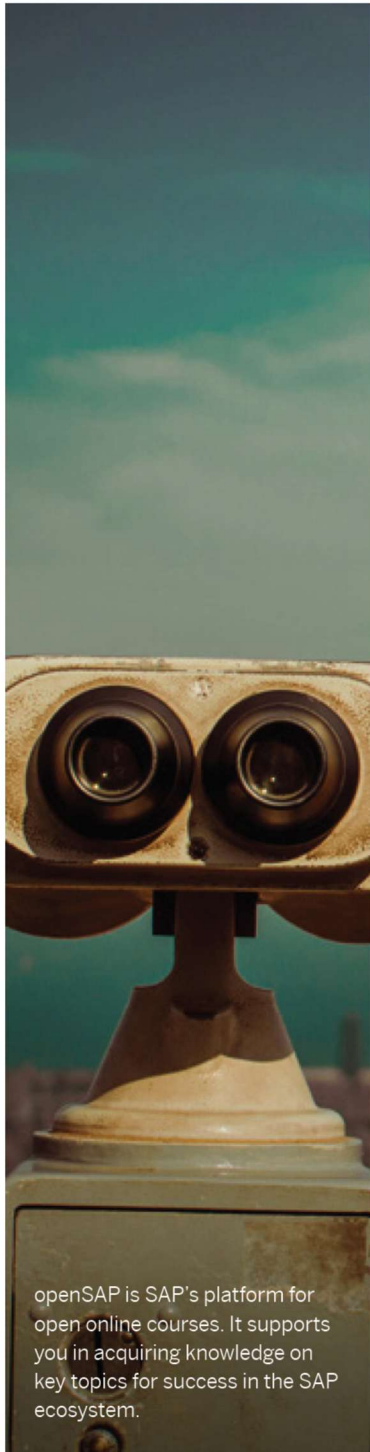
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openSAP

2.29 HSESH1 - Full-Text Search with SAP HANA Platform (2017)



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Full-Text Search with SAP HANA Platform


Instructor: Markus Fath

This course was held from September 13 through October 12, 2017 and comprised 4-5 hours learning effort and 1 course assignment.


The course provided an introduction to full-text search with SAP HANA platform, including full-text indexing and search via SQL, fuzzy search, search rules, and SAP HANA enterprise search.

Maximum score possible for this course: 30 points.

The candidate scored 30.0 points (100.0%) by taking a course assignment.



Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation



Markus Fath
Instructor

Walldorf, Germany, September 18, 2017



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openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

2.30 HSGS1 - Spatial Analysis with SAP HANA (2017)**Record of Achievement**

openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Spatial Analysis with SAP HANA Platform

Instructor: Markus Fath

This three-week online course was held from April 25 through May 24, 2017. It comprised 4-6 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction to SAP HANA Spatial
- Spatial Analysis
- Development of Spatial Applications

Maximum score possible for this course: 180 points.

The candidate scored 167.0 points (92.8%) by working on weekly assignments and taking a final exam.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Markus Fath
Instructor

Waldorf, May 20, 2017



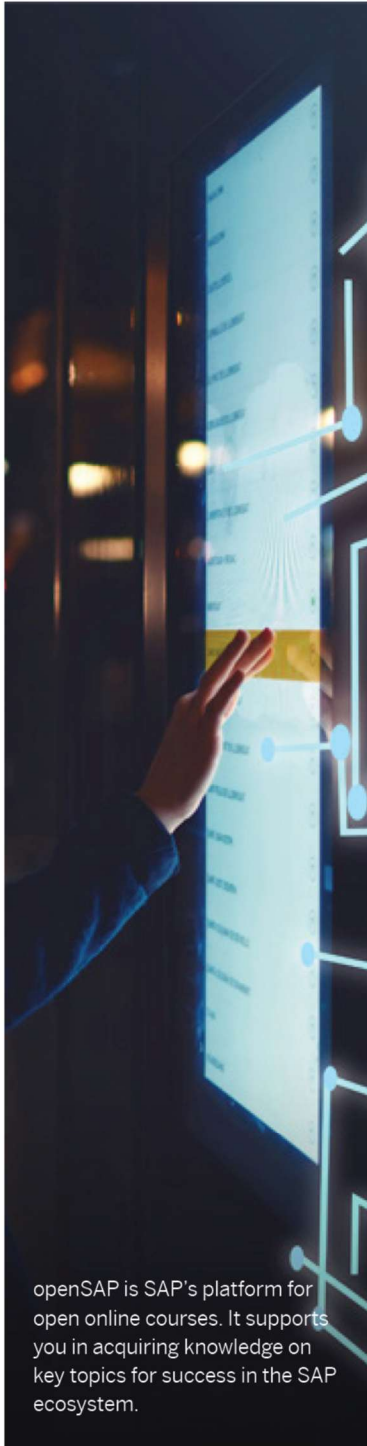
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2.31 HSGRA1 - Analyzing Connected Data with SAP HANA Graph



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Analyzing Connected Data with SAP HANA Graph

Instructor: Markus Fath

This nutshell course was held from June 20 through July 19, 2018, and comprised 4-5 hours of learning effort and 1 course assignment.

The course provided an introduction to SAP HANA graph, described possible use cases, and explained how to expose data to SAP HANA graph via nodes, edges, and workspaces.

Maximum score possible for this course: 30 points.

The candidate scored 30.0 points (100.0%) by taking a course assignment.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Markus Fath
Instructor

Walldorf, Germany, July 1, 2018



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2.32 SAP AI Business Services for Intelligent Processes (openSAP, 2020)

THE BEST RUN 

Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Use SAP AI Business Services to Kick-Start Your Intelligent Processes

Instructors: Nadine Hoffmann, Jana Wuerth, Daniel Kwak

This three-week online course was held from October 14 through November 12, 2020. It comprised 2-3 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Get Started with SAP AI Business Services
- Simplify Business Document Processing
- AI in Master Data Management & Invoice Processing

Maximum score possible for this course: 180 points.

The candidate scored 147.3 points (81.8%) by working on weekly assignments and taking a final exam.



Michaela Laemmler
Head of openSAP



Ulf Brackmann
Head of SAP AI Business Services

Waldorf, Germany, November 4, 2020



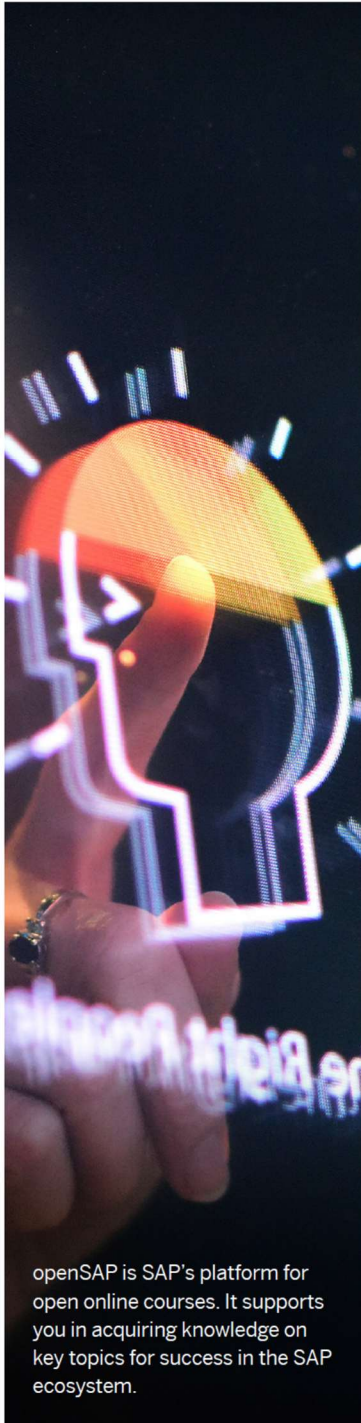
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2.33 Build Bots with SAP Intelligent Robotic Process Automation (RPA2)

THE BEST RUN 

Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
How to Build Bots with SAP Intelligent Robotic Process Automation

Instructors: Alexandre Fortin, Samir Hamichi, Martin Jakubik,
Moumita Bera, Rosa Orihuela

This four-week online course was held from November 12 through December 18, 2019. It comprised 3-5 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction
- Development Phase I
- Development Phase II
- Further Topics

Maximum score possible for this course: 240 points.

The candidate scored 213.5 points (89.0%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.



Michaela Laemmler
Head of openSAP



Sebastian Schrötel
Vice President, Head of SAP
Intelligent Robotic Process
Automation

Waldorf, Germany, December 10, 2019



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open.sap.com

2.34 Next-Level Bot Building with SAP Intelligent RPA 2.0 (2021, RPA5)



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Enter Next-Level Bot Building with SAP Intelligent RPA 2.0

Featuring SAP Intelligent RPA Experts

This five-week online course was held from February 9 through March 24, 2021. It comprised 3-4 hours of learning effort per week, 5 weekly assignments, and 1 final exam.

The course covered the following topics:

- Get Started with SAP Intelligent RPA 2.0
- First Automations
- Build Your End-to-End Project
- Leverage a Rich Desktop Ecosystem
- Leverage Business Applications

Maximum score possible for this course: 300 points.

The candidate scored 230.8 points (76.9%) by working on weekly assignments and taking a final exam.

Michaela Laemmler
Head of openSAP

Sebastian Schroetel
Vice President, Head of SAP
Intelligent Robotic Process
Automation

Waldorf, Germany, March 16, 2021



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openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

2.35 Blockchain (2018, openHPI)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat erfolgreich bestanden:

Blockchain - Hype oder Innovation?

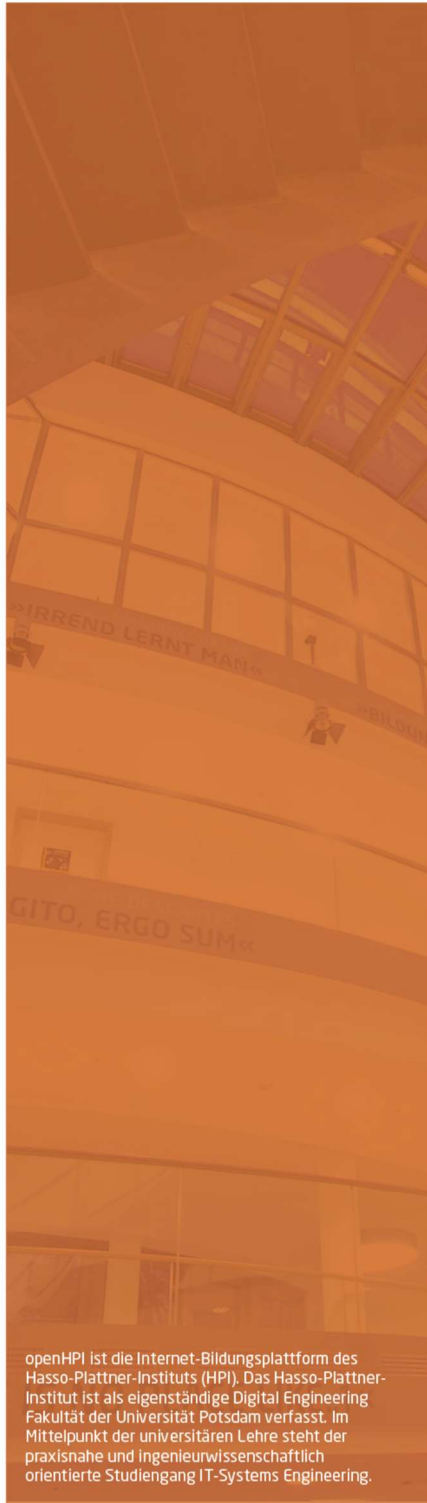
von Prof. Dr. Christoph Meinel und Tatiana Gayvoronskaya

Der zweiwöchige Grundlagenkurs zur Blockchain-Technologie bestand aus den folgenden Einheiten:

- Begriffsklärung Bitcoin und Blockchain
- P2P-Netzwerke und Kryptographie
- Architektur und Funktionsweise der Blockchain-Technologie
- Stärken und Herausforderungen
- Einsatzmöglichkeiten (Colored Coins, Smart Contracts)
- Bekannte Projekte und Einsatzbereiche

Gesamtergebnis (Hausaufgaben und Abschlussprüfung)

57,0 von 60,0 möglichen Punkten (95,0%)
 Der Teilnehmer gehört zu den besten 20% dieses Kurses.



openHPI ist die Internet-Bildungsplattform des Hasso-Plattner-Instituts (HPI). Das Hasso-Plattner-Institut ist als eigenständige Digital Engineering Fakultät der Universität Potsdam verfasst. Im Mittelpunkt der universitären Lehre steht der praxisnahe und ingenieurwissenschaftlich orientierte Studiengang IT-Systems Engineering.

Dr. Meinel

Prof. Dr. Christoph Meinel
Kursleiter und openHPI-Direktor

Tatiana Gayvoronskaya

Tatiana Gayvoronskaya
Kursleiterin



Potsdam, am 23. Juli 2018



Online Verifizierung: <https://open.hpi.de/verify/xetal-dyldod-mupaf-zoroz-bivas>

2.36 Blockchain (2021, openHPI)



Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

Record of Achievement

Blockchain - Revealing the Myth

Course Duration:	17.03.2021 - 31.03.2021
Course Language:	English
Estimated Effort:	3 - 6 Weekly Hours
Course Guidance:	Prof. Dr. Meinel, Tatiana Gayvoronskaya

Course Topics:

- The initial idea of blockchain technology
- The complex solution of Bitcoin system
- Post-Bitcoin projects and Ethereum system
- Private Permissioned blockchains
- Scalability, Decentralization, Security
- Useful and possible implementations of blockchain Technology
- Widespread areas of application

Total Result

27.3 out of 30.0 possible points (91.0%)

Ch. Meinel

Prof. Dr. Christoph Meinel
openHPI Director



openHPI is the education platform of the Hasso Plattner Institute (HPI) for Digital Engineering. Together with the University of Potsdam, the Hasso Plattner Institute forms the Digital Engineering Faculty of the University of Potsdam. The university's teaching focuses on a variety of practical and engineering-oriented study programs.

Potsdam, March 30, 2021

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2.37 HSWO1 - Big Data with SAP HANA Vora (2016)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Big Data with SAP HANA Vora

Instructors: Puntis Jifroodan, Balaji Krishna

This three-week online course was held from September 6 through October 5, 2016. It comprised 2-3 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Overview: SAP HANA Vora
- SAP HANA Vora Data Modeling Tool
- Development in SAP HANA Vora

Maximum score possible for this course: 180 points.

The candidate scored 165 points (92%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement & Transformation

Puntis Jifroodan
Instructor

Balaji Krishna
Instructor

Walldorf, October 2, 2016



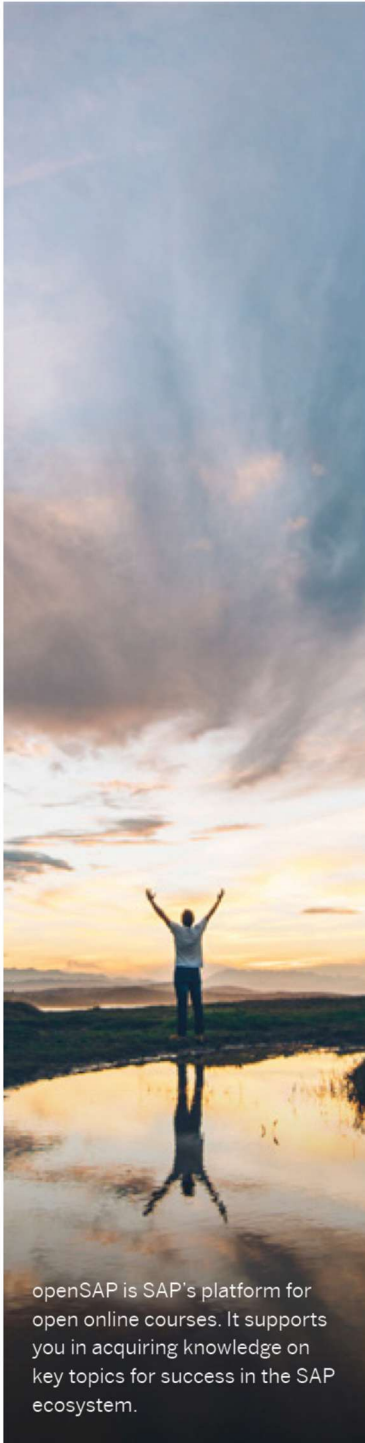
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2.38 HUB1 - SAP Data Hub



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Freedom of Data with SAP Data Hub

Instructors: Tobias Koebler, Christian Sengstock, Ulrich Christ

This six-week online course was held from January 15 through March 6, 2019. It comprised 3-4 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- SAP Data Hub Overview & Introduction
- Architecture & Deployment
- Landscape Management & Administration
- Metadata Management & Catalog
- Data-Driven Data Pipelines
- Outlook & Future Concepts

Maximum score possible for this course: 360 points.

The candidate scored 340.3 points (94.5%) by working on weekly assignments and taking a final exam.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP SE

Tobias Koebler
Instructor

Walldorf, Germany, February 26, 2019



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2.39 BWHANA1 - SAP Business Warehouse 7.5 powered by SAP HANA (HANA SPS11)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
SAP Business Warehouse powered by SAP HANA

Instructors: Marc Hartz and Ulrich Christ

This five-week online course was held from April 6 through May 19, 2016. It comprised 4-6 hours of learning effort per week, 5 weekly assignments, and 1 final exam.

The course covered the following topics:

- SAP BW powered by SAP HANA – Intro
- Data Integration & Management
- Data Consumption & Analysis
- Planning & Lifecycle Management
- Updates for SAP BW 7.5 powered by SAP HANA

Maximum score possible for this course: 300 points.

The candidate scored **283 points (94%)** by working on weekly assignments and taking a final exam.

Dr. Bernd Welz
Executive Vice President
SAP Solution and Knowledge Packaging

Marc Hartz
Instructor

Ulrich Christ
Instructor

Waldorf, May 2016



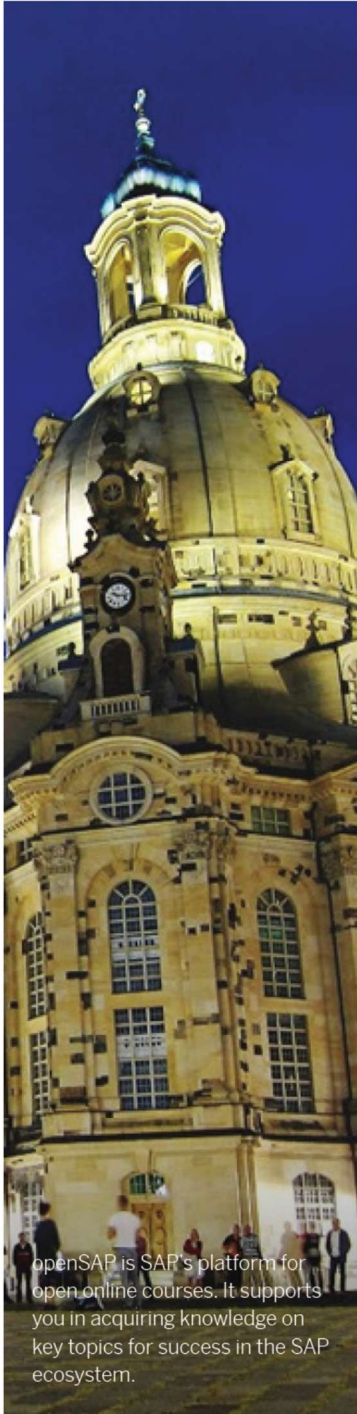
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openSAP

2.40 BW4H2 - Modern Data Warehousing with SAP BW/4HANA

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Modern Data Warehousing with SAP BW/4HANA

Instructors: Ulrich Christ, Gordon Witzel

This four-week online course was held from November 6 through December 12, 2018. It comprised 6-8 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

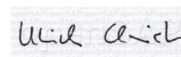
- First Steps with SAP BW/4HANA
- Integrating SAP HANA Platform Capabilities
- Modern Trends in Data Management
- Related Topics / Additional: Hear Our Partners

Maximum score possible for this course: 240 points.

The candidate scored 213.0 points (88.8%) by working on weekly assignments and taking a final exam.



Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation



Ulrich Christ
Instructor



Gordon Witzel
Instructor

Walldorf, Germany, December 4, 2018



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2.41 SAC5 - SAP Analytics Cloud (openSAP, 2022)



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

SAP Analytics Cloud – Become an Augmented BI Expert

Instructors: SAP Analytics Cloud Experts

This five-week online course was held from April 19 through June 1, 2022. It comprised 3-4 hours of learning effort per week, 5 weekly assignments, and 1 final exam.

The course covered the following topics:

- Data Modeling
- Story Creation
- Story Creation and Analysis
- Augmented Analytics
- Analytic Applications

Maximum score possible for this course: 300 points.

The candidate scored 261.5 points (87.2%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 20% of the course participants.

Michaela Laemmler
Head of openSAP

Iver van de Zend
VP Strategy & Solution
Management,
Planning & Analytics

Walldorf, Germany, May 24, 2022



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openSAP
open.sap.com

3 Technologiegrundlagen (Universität Potsdam)

3.1 In-Memory Data Management (2015)



Record of Achievement

Markus Werkmeister

markus@werkmeister.com

born on: March 26, 1969

has participated in the following openHPI course:

In-Memory Data Management

by Prof. Dr. h.c. mult. Hasso Plattner

The course covered the following topics:

- History and Future of Enterprise Computing
- Enterprise Application Characteristics
- Basic and Advanced Database Storage Techniques
- In-Memory Database Operators
- Potentials of Columnar In-Memory Databases

Total result (Homework and Final Exam)

216 out of 228 possible points (95%)
 Is part of the top 10% active course participants

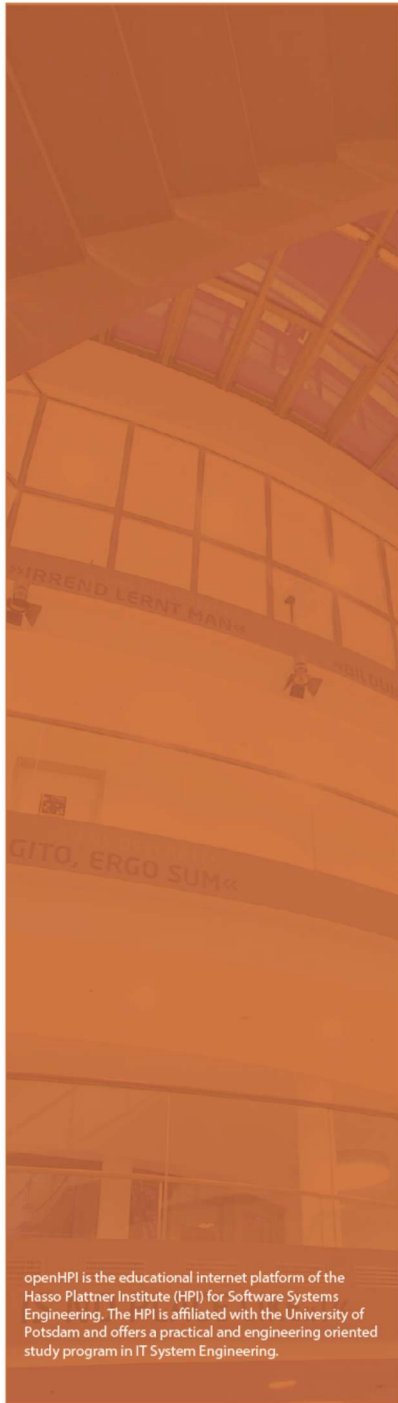
Hasso
 Prof. Dr. h.c. mult. Hasso Plattner
 Course Instructor

Ch. Meinel
 Prof. Dr. Christoph Meinel
 Head of openHPI

Potsdam, October 28, 2015



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openHPI is the educational internet platform of the Hasso Plattner Institute (HPI) for Software Systems Engineering. The HPI is affiliated with the University of Potsdam and offers a practical and engineering oriented study program in IT System Engineering.

3.2 Internetworking / Wie funktioniert das Internet (2016)



Zeugnis

Markus Werkmeister
markus@werkmeister.com
geboren am: 26. März 1969

hat erfolgreich bestanden:

Wie funktioniert das Internet?

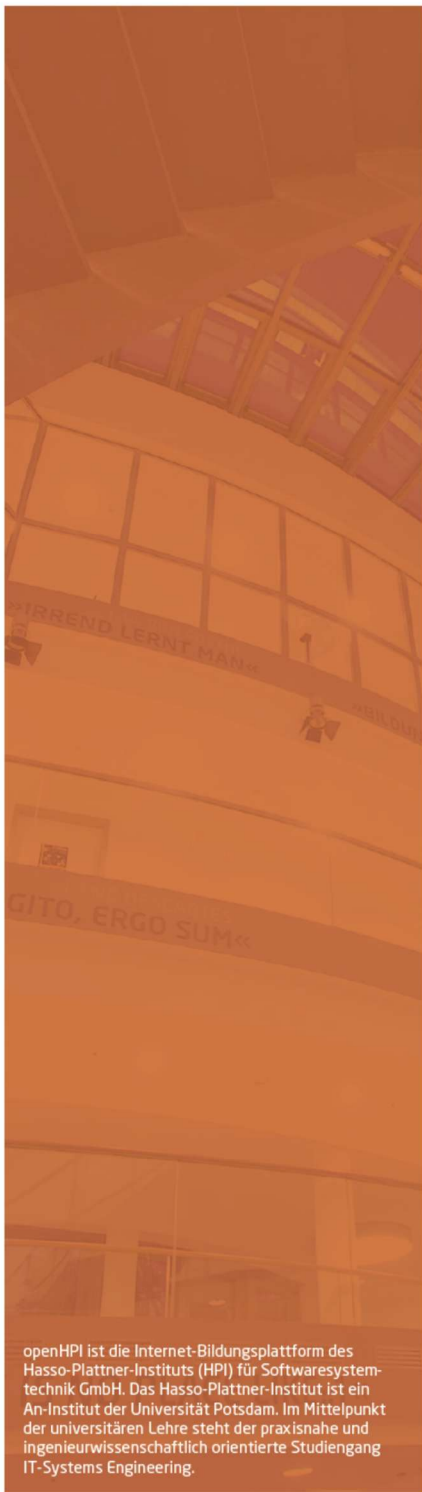
von Prof. Dr. Christoph Meinel

Der sechswöchige Kurs bestand aus den folgenden Einheiten:

- Netzwerktechniken
- Internetworking mit IPv4
- Das neue Internetprotokoll IPv6
- Transportprotokolle TCP und UDP
- Internetanwendungen

Gesamtergebnis (Hausaufgaben und Abschlussprüfung)

160 von 180 möglichen Punkten (89%)



Prof. Dr. Christoph Meinel
Kursleiter und openHPI Direktor
Potsdam, am 31. Oktober 2016



Online Verifizierung: <https://open.hpi.de/verify/xodec-nisit-ka1yp-fuvic-genok>

3.3 IPv6 in modernen Netzen (2018)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat erfolgreich bestanden:

IPv6 in modernen Netzwerken

von Wilhelm Boeddinghaus

Der zweiwöchige Kurs bestand aus den folgenden Einheiten:

- Aufbau der IPv6-Adressen
- Typen von IPv6-Adressen
- Konfiguration von IPv6-Adressen auf Arbeitsplatzrechnern und Servern
- IPv6-Adressplan
- Erweiterbarkeit des Protokolls
- Fragmentierung von IPv6-Paketen
- Testlabor und erste Schritte

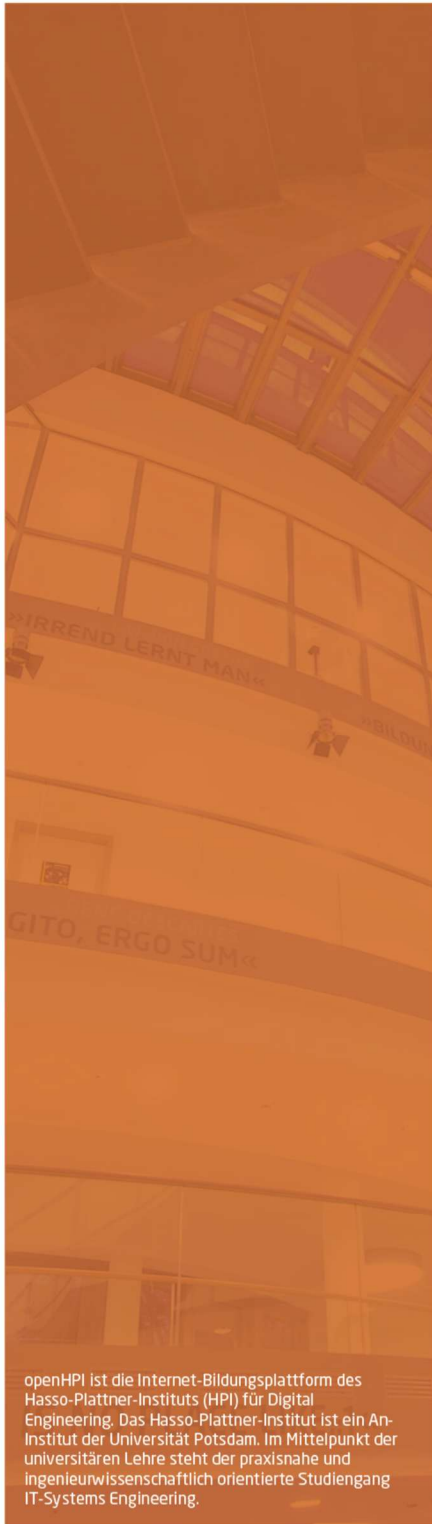
Gesamtergebnis (Hausaufgaben und Abschlussprüfung)

59,0 von 60,0 möglichen Punkten (98,3%)

Wilhelm Boeddinghaus
Kursleiter
Potsdam, am 29. Juni 2018



Online Verifizierung: <https://open.hpi.de/verify/xiles-ponav-rylis-gozup-ryken>



openHPI ist die Internet-Bildungsplattform des Hasso-Plattner-Instituts (HPI) für Digital Engineering. Das Hasso-Plattner-Institut ist ein An-Institut der Universität Potsdam. Im Mittelpunkt der universitären Lehre steht der praxisnahe und ingenieurwissenschaftlich orientierte Studiengang IT-Systems Engineering.

3.4 Web Technologies (2015)



Record of Achievement

Markus Werkmeister
markus@werkmeister.com
born on: March 26, 1969

has participated in the following openHPI course:

Web Technologies

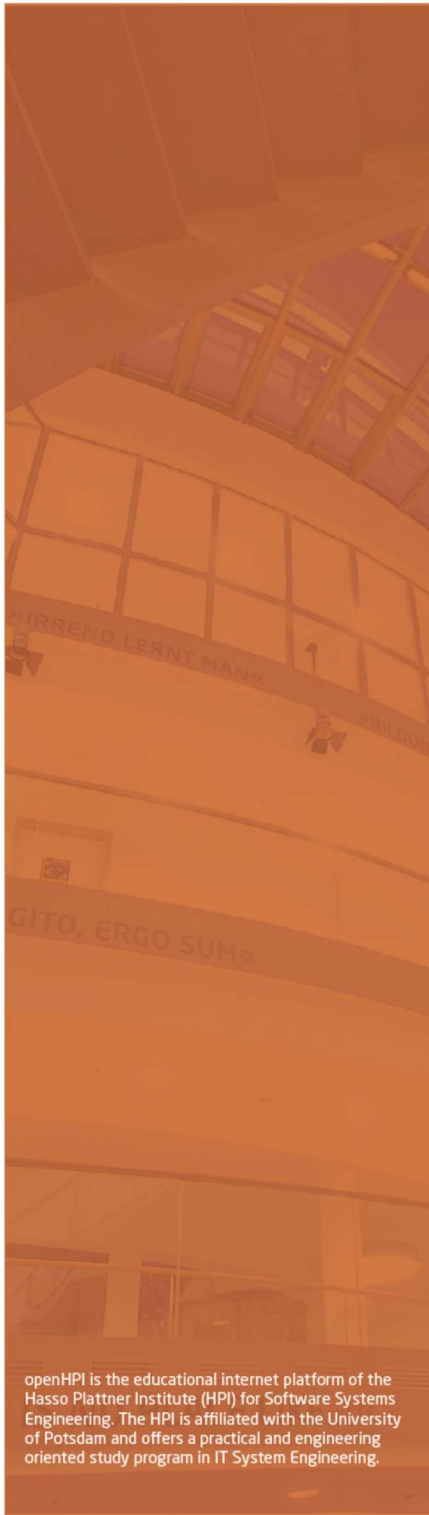
by Prof. Dr. Christoph Meinel

The course covered the following topics:

- URL and HTTP
- HTML, CSS, and XML
- Client-side Web Programming
- Server-side Web Programming
- Social, Semantic, and Service Web

Total result (Homework and Final Exam)

167 out of 180 possible points (93%)



openHPI is the educational internet platform of the Hasso Plattner Institute (HPI) for Software Systems Engineering. The HPI is affiliated with the University of Potsdam and offers a practical and engineering oriented study program in IT System Engineering.

Dr. Meinel

Prof. Dr. Christoph Meinel
Head of openHPI

Potsdam, July 26, 2015



Verify online: <https://open.hpi.de/verify/xivel-hylah-dodyf-lucos-hacal>

3.5 Sicherheit im Internet (2016)



Zeugnis

Markus Werkmeister

markus@werkmeister.com

geboren am: 26. März 1969

hat erfolgreich bestanden:

Sicherheit im Internet

von Prof. Dr. Christoph Meinel

Der sechswöchige Kurs bestand aus den folgenden Einheiten:

- Grundbegriffe Internetsicherheit
- Digitale Identitäten und Passwörter
- Malware – Viren, Würmer und Botnets
- Offenes Internet, unsichere Transportwege
- Einführung in die Verschlüsselung
- Risiken in der digitalen Welt - Smartphones, Cloud und Smart Home

Gesamtergebnis (Hausaufgaben und Abschlussprüfung)

174 von 180 möglichen Punkten (97%)

Der Teilnehmer gehört zu den besten 10% dieses Kurses

Dr. Meinel

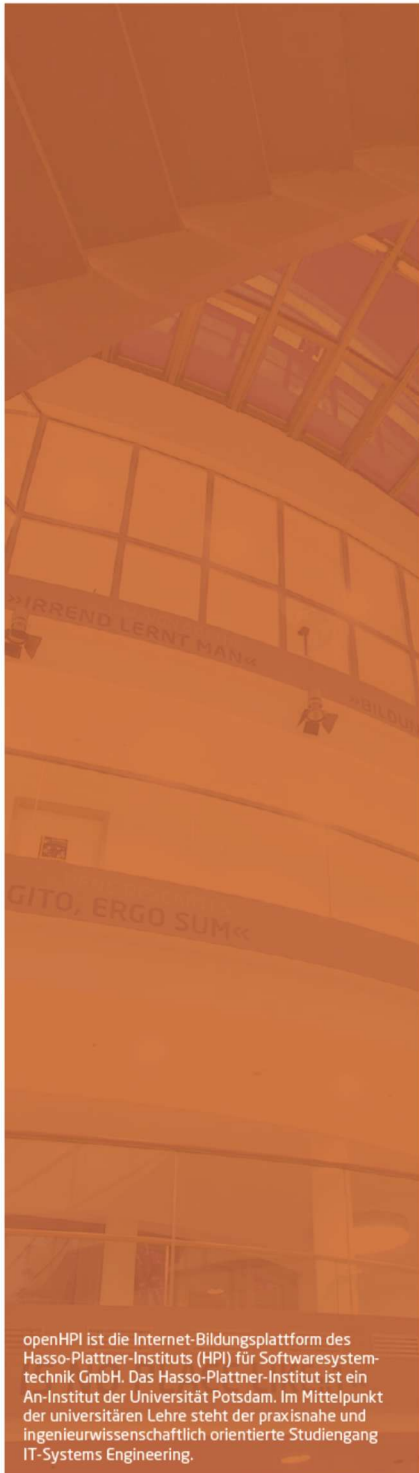
Prof. Dr. Christoph Meinel

Kursleiter und openHPI Direktor

Potsdam, am 5. April 2016



Online Verifizierung: <https://open.hpi.de/verify/xupak-pipuh-bedez-kisor-zaveh>



openHPI ist die Internet-Bildungsplattform des Hasso-Plattner-Instituts (HPI) für Softwaresystemtechnik GmbH. Das Hasso-Plattner-Institut ist ein An-Institut der Universität Potsdam. Im Mittelpunkt der universitären Lehre steht der praxisnahe und ingenieurwissenschaftlich orientierte Studiengang IT-Systems Engineering.

4 Elektronische Rechnung

4.1 E-Rechnungspflicht: Software richtig implementieren



Teilnahmezertifikat

E-Rechnungspflicht: Software richtig implementieren

Hiermit bestätigen wir

Markus Werkmeister

die erfolgreiche Teilnahme
an der Veranstaltung.

13.–17. Januar 2025

3 Tage jeweils 3,5 Stunden

Im Rahmen des Workshops wurden folgende Lerninhalte vermittelt:

- Anforderungen und Umsetzung der gesetzlichen Vorgaben zur innerdeutschen E-Rechnungspflicht ab 2025
- Kennenlernen und Anwenden der: (XML-Formate des europäischen Rechnungsstandards EN16931 (Cross Industry Invoice (CII) und Universal Business Language (UBL)) / XML in PDF-Dateien Factur-X und ZUGFeRD / XRechnung im B2G- und B2B-Bereich)
- Simulierter Rechnungseingang: Beispiele von Rechnungen, mit denen ab 2025 zu rechnen ist
- Darstellungsdetails, Umwandlung, Prüfung und Umsetzung der X(ML)-Rechnung
- Wissen über Bibliotheken, Tools und deren Anwendung
- Fallstricke, Tests und häufige Fehler
- Beispieldateien, Spezifikationen, Rechenregeln und Codelisten


Janine Rumrich,
Head of Events

17.01.2025

Heise Medien
GmbH & Co. KG

Karl-Wiechert-Allee 10
30625 Hannover
T +49 511 5352-0
F +49 511 5352-129
E aboservice@heise-academy.de
W www.heise-academy.de

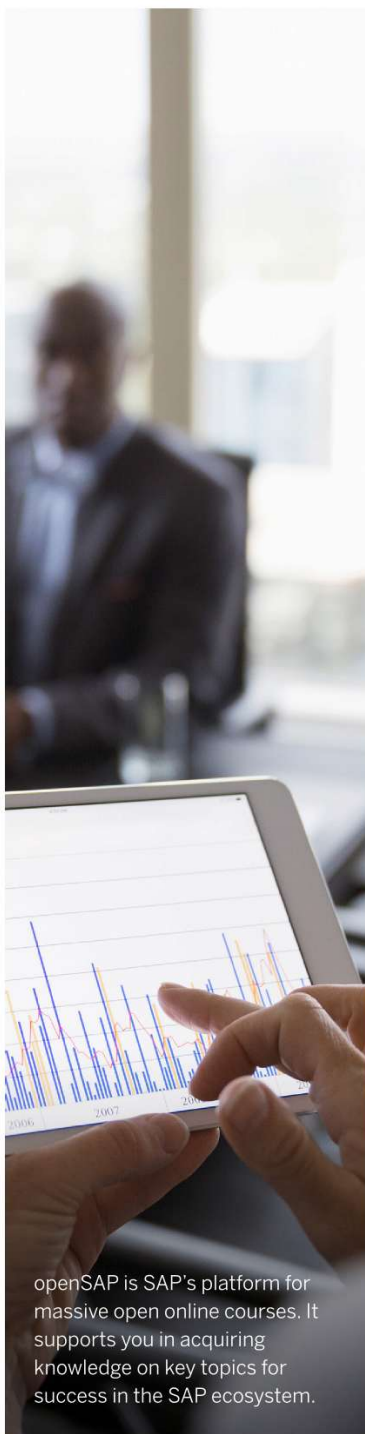
Registergericht Hannover HRA 26709
Pers. haftende Gesellschafterin
Heise Medien Geschäftsführung GmbH
Registergericht Hannover HRB 60405
Geschäftsführung
Ansgar Heise · Beate Gerold

Postbank Hannover
IBAN DE96 2501 0030 0457 1193 08
BIC PBNKDEFF
USt-IdNr. DE 813 501 887
St.-Nr. 25/215/03805

4.2 Unlocking Tax Transformation with SAP (2024)



Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Unlocking Tax Transformation with SAP

Instructors: SAP and Deloitte Tax Experts

This four-week course was held from April 30 through June 5, 2024. It comprised 1 hour of learning effort per week, 4 weekly assignments and 1 final exam.

The course covered the following topics:

- Setting the Scene and Indirect Tax
- Direct Tax
- Transfer Pricing
- Other Tax Types and Tax Transformation Business Case

Maximum score possible for this course: 240 points.

The candidate scored 208.3 points (86.8%) by working on weekly assignments and taking a final exam.


 Eva Hett
 Head of Content Production,
 openSAP


 Atsuko Eguchi
 Lead for Global Tax
 Management at SAP


 Martijn van Hoof
 Partner Tax Technology
 at Deloitte

Walldorf, Germany, May 28, 2024



Verify online: <https://open.sap.com/verify/xikif-cofab-tefeb-dibec-selyf>



5 SAP Supply Chain Management

5.1 SAP Certified Application Associate Transportation Management 9.0



CERTIFICATE

SAP Global Certification

We hereby confirm that

Markus Werkmeister

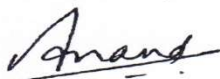
is certified as

SAP Certified Application Associate - Transportation Management 9.0

Certificate ID: 0008261983

Certified on: Dezember 12, 2014

Walldorf, Januar 07, 2015



Anand Eswaran
Head of Global Services



5.2 TM100 - Processes in Transportation Management (SAP TM 8.0)

TEILNAHMEBESTÄTIGUNG

Wien, 30 Mai 2012

Herr Markus Werkmeister
hat an der Veranstaltung teilgenommen
vom 29.05.2012 bis 31.05.2012 .

TM100 Processes in SAP Transportation Management

Veranstaltungsinhalt:

- * SAP TM Overview
- * SAP TM System Building
- * SAP TM Processes
- * SAP TM Subcontracting and Tendering
- * Preparation for SAP TM Optimization
- * SAP TM Optimization Process
- * Transportation Charge Management

SAP Österreich GmbH
SAP Education

201204-405 (04-09)

THE BEST-RUN BUSINESSES RUN SAP



5.3 TM100 - Processes in SAP Transportation Management Overview (SAP TM 9.0)



Teilnahmebestätigung

Walldorf, den 25.10.2013

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 21. Oktober 2013 bis 25. Oktober 2013.

TM100 Processes in SAP Transportation Management Overview

Veranstaltungsinhalt:

- * Introduction to Net Weaver Business Client UI
- * Introduction to Network Master Data:
 - > Products and Locations
 - > Transportation Lanes and Resources
 - > Other....
- * Overview of supported Business scenarios:
 - > Outbound and Inbound Shipments (Domestic and Int'l)
 - > Ocean Freight
 - > Air Freight
 - > Freight Forwarding
- * Overview of Transportation Planning
 - > Examine concept of Freight Units
 - > Create Transportation Proposals
 - > Generate Freight Orders
- * Examination of Transportation Execution
 - > Carrier Selection
 - > Tendering Shipments
 - > Delivery Generation and Integration
 - > Shipment Creation
 - > Generate Documents and Analytics
- * Introduction to Freight Settlement
 - > Transportation Charge Management
 - > Calculating Charges
 - > Freight Settlement
 - > Generating Accruals
 - > Cost Distribution

SAP Deutschland AG & Co. KG
SAP Education



5.4 TM110 - Planning in Transportation Management – Processes and Customizing (SAP TM 9.0)



Teilnahmebestätigung

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 18. November 2013 bis 22. November 2013.

Walldorf, den 22.11.2013

TM110 Planning in Transportation Management – Processes and Customizing

Veranstaltungsinhalt:

- * Creation of Organizational elements related to Transportation Planning
- * Designing a transportation network:
 - > Overview of ECC master data
 - > Locations
 - > Transportation Zones and Hierarchies
 - > Means of Transportation and Transportation lanes
 - > Resources and Equipment Types
- * Conditions and Incompatibilities to support transportation restrictions
- * Creating and Configuration Order Management Scenarios:
 - > Configure ERP Requirement Integration
 - > Configure TM requirement and Planning Document Types
 - > Set up and discuss Sales order Scheduling Scenarios
- * Perform Transportation Planning activities
 - > Generate Selection and Planning Profiles
- * Experiment planning with Transportation cockpit
 - > Personalize Transportation Cockpit
- * Perform Interactive Transportation Planning scenarios
 - > Modal decisions
 - > Pooled Shipments
 - > Automated Planning (Zero Click)
 - > International Ocean Shipments

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SAP Education



5.5 TM120 - Execution, Charge Management & Settlement Processes in Transportation Management (SAP TM 9.0)



Teilnahmebestätigung

Walldorf, den 14.03.2014

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 10. März 2014 bis 14. März 2014.

TM120 SAP TM9.0 – Execution, Charge Management & Settlement Processes in Transportation Management

Veranstaltungsinhalt:

- * SAP Transportation Management Scenarios
- * Freight Order Type Configuration
- * Organizational Setup for Freight Order Processing
- * Business Partner Determination
- * Carrier Selection based on Cost, Business Shares and Transportation Allocation
- * Tendering of Freight Orders
- * SAP TM and SAP ERP Shipment Integration (inbound and outbound)
- * Monitoring Events in SAP TM using SAP Event Management
- * Setting Up Transportation Charge Management in SAP TM
- * Transportation Cost Distribution
- * Freight Settlement and Carrier Invoice Processing
- * Freight Charge Corrections
- * Forwarding Order Settlement and Customer Invoice Processing
- * Internal Settlement (inter-/ intra-company)

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SAP Education



5.6 OTM91 - SAP Transportation Management 9.1



We hereby confirm that

Markus Werkmeister

completed an e-learning course in

OKP SAP Transportation Management 9.1

Please note this certificate of completion is not an endorsement by SAP Education of participant proficiency in the course material and should only be considered as proof of attendance to the e-Learning course.



5.7 EWM100 - Prozesse in SAP Extended Warehouse Management (EWM 9.1)



Teilnahmebestätigung

Walldorf, den 13.02.2015

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 09. Februar 2015 bis 13. Februar 2015.

EWM100 Prozesse in SAP Extended Warehouse Management

Veranstaltungsinhalt:

- * Einführung in das SAP EWM-System und dessen Architektur
- * Organisationselemente und Organisationsstruktur des EWM
- * Stammdaten des EWM
- * Lagerverwaltungsmonitor und mobile Datenerfassung
- * Wareneingangs- und Warenausgangsprozesse
- * Prozessorientierte Lagerungssteuerung
- * Produktionsversorgung
- * Lagerungsdisposition und Lagerreorganisation
- * Yard-Management
- * Arbeitsmanagement
- * Materialflusssystem

SAP Deutschland SE & Co. KG
SAP Education



5.8 SCM663 - SAP Event Management (SAP EM 7.0)



Teilnahmebestätigung

Herr Markus Werkmeister

Walldorf, den 28.09.2012

hat an der Veranstaltung teilgenommen
vom 26. September 2012 bis 28. September 2012.

SCM663 SAP Event Management

Veranstaltungsinhalt:

- * Übersicht
- * Ereignisse anlegen
- * Ereignisbenachrichtigung und Statusabfrage
- * Monitoring und Analyse
- * Visibility-Prozesse
- * Anbindung von SAP-Applikationssystemen
- * Im Rahmen der Konfiguration: Anlegen von Event Handlers, Ereignisbenachrichtigung; Konfiguration von Reaktionen auf Ereignisse sowie der Webkommunikationsschicht (WKS); Belegfluss im Event Management und Konfiguration der Schnittstelle zwischen Event Management und BI.
- * Anhang mit zusätzlichen Themen

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SAP Education



5.9 S4H36 - SAP Logistics Transformation from SAP ERP to SAP S/4HANA

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

SAP Logistics – Transformation from SAP ERP to SAP S/4HANA

Instructors: Florian Kuchta, Meike Helwig, Sascha Vierlinger, Carsten Abel

This three-week online course was held from November 6 through December 5, 2023.

It comprised 3-4 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction to TM and EWM in SAP S/4HANA
- Transformation from LE-TRA/LE-WM to TM/EWM
- Capabilities of Advanced TM and EWM

Maximum score possible for this course: 180 points.

The candidate scored 171.3 points (87.8%) by working on weekly assignments and taking a final exam.


The candidate belongs to the top 20% of the course participants.



Maxwell Wessel
Chief Learning Officer,
SAP Learning



Florian Kuchta
Head of Product
Management
Logistics,
Private Cloud Edition



Meike Helwig
Teamlead
Transportation
Management,
CoE EMEA

Waldorf, Germany, November 27, 2023



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openSAP
open.sap.com

5.10 ESCM2 - Digital Transformation Across the Extended Supply Chain



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Digital Transformation Across the Extended Supply Chain

Instructors: Hans Thalbauer and Richard Howells

This six-week online course was held from March 15 through May 04, 2016. It comprised 3-4 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Demand-Driven Business Planning
- Response and Supply Orchestration
- Efficient Logistics and Order Fulfillment
- Sustainable Product Innovation
- Automated Agile Manufacturing
- Operational Excellence

Maximum score possible for this course: 360 points.

The candidate scored 343 points (95%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement & Transformation

Hans Thalbauer
Instructor

Richard Howells
Instructor

Walldorf, May 2016



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6 SAP HANA und SAP Business Technology Platform (BTP)

6.1 SAP Certified Application Associate - SAP HANA (Edition 2014, SPS08)



CERTIFICATE

SAP Global Certification

We hereby confirm that

Markus Werkmeister

is certified as

SAP Certified Application Associate (Edition 2014) - SAP HANA

Certificate ID: 0008261983
Certified on: Juli 17, 2015

Walldorf, Juli 22, 2015

Michael Kleinemeier
Member of the Global Managing Board of SAP SE
Global Service & Support



6.2 HA100 - SAP HANA - Introduction (HANA SPS08)



Teilnahmebestätigung

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 12. Mai 2014 bis 13. Mai 2014.

Walldorf, den 13.05.2014

HA100 SAP HANA - Introduction

Veranstaltungsinhalt:

- * Overview of SAP HANA 1.0
- * Architecture of SAP in-memory computing
- * Overview of data provisioning in SAP HANA with the following tools:
 - > SAP Data Services
 - > SAP Sybase Replication Server
 - > SAP LT Replication Server
 - > SAP Direct Extractor Connection (DXC)
 - > Flat File upload
 - > Modeling with SAP HANA
- * SAP HANA Interfaces to BI client tools, including:
 - > SAP BusinessObjects Explorer
 - > SAP BusinessObjects Analysis
 - > SAP Crystal Reports
 - > SAP BusinessObjects Dashboards
 - > SAP BusinessObjects Web Intelligence
 - > SAP Lumira

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SAP Education



6.3 HA300 - SAP HANA - Implementation and Modelling (HANA SPS08)



Teilnahmebestätigung

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 22. September 2014 bis 24. September 2014.

Walldorf, den 24.09.2014

HA300 SAP HANA - Implementation and Modeling

Veranstaltungsinhalt:

- * Approaching SAP HANA modeling
- * Connecting tables
- * Using Graphic Modeling Tools
- * Using SQL Modeling Tools
- * Other Modeling Features, including
 - > Decision Tables
 - > Geospatial Data
- * Using Text Search and Analysis
- * Managing modeling content
- * Security and Authorizations
- * Data Provisioning
- * Introduction to the Application Function Library

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SAP Education



6.4 HA350 - SAP HANA - Data Provisioning (HANA SPS08)



Teilnahmebestätigung

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 25. September 2014 bis 26. September 2014.

Walldorf, den 26.09.2014

HA350 SAP HANA - Data Provisioning

Veranstaltungsinhalt:

- * Trigger-based replication with SAP Landscape Transformation (SLT SP05)
- * Data provisioning using SAP Data Services (DS)
- * Sybase Replication Server (SRS)
- * Direct Extractor extraction (DXC)
- * SAP BW used as ETL - Tool
- * Uploading data from flat files

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6.5 HCP1 - SAP HANA Cloud Platform Essentials (HANA SPS12)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
SAP HANA Cloud Platform Essentials

Instructors: Rui Nogueira and Sven Kohlhaas

This six-week online course was held from May 10 through June 29, 2016. It comprised 4-6 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Basics
- Security
- Connectivity
- Persistence
- IoT and Collaboration
- Additional Services

Maximum score possible for this course: 360 points.

The candidate scored **342 points (95%)** by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement &
Transformation

Rui Nogueira
Instructor

Sven Kohlhaas
Instructor

Walldorf, July 2016



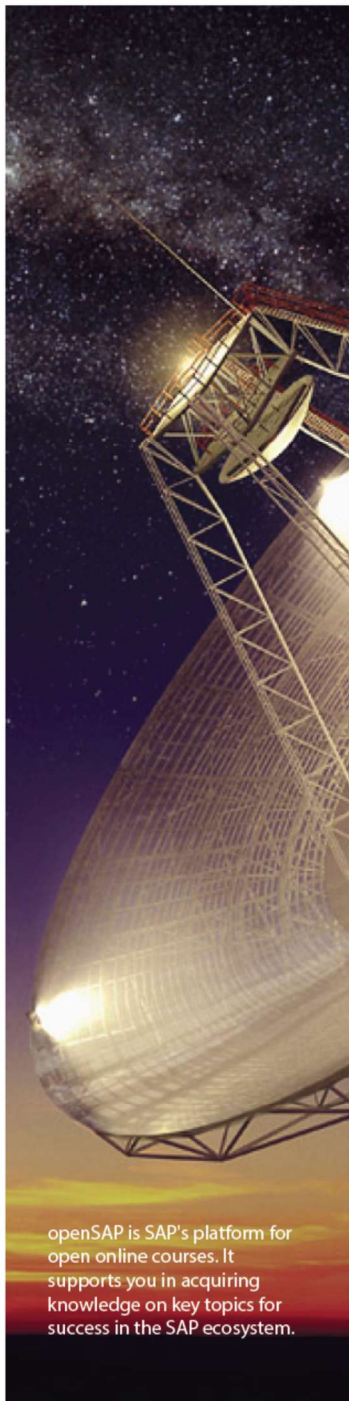
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6.6 HCP3A1 - Extending SAP S4HANA with HANA Cloud Platform



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Extending SAP S/4HANA with SAP HANA Cloud Platform

Instructor: Thomas Bieser

This six-week online course was held from January 11 through March 2, 2017. It comprised 4-6 hours of learning effort per week, 6 weekly assignments, and 1 final exam.

The course covered the following topics:

- Getting Started
- UX Extension
- Collaborative Extension
- Analytical Extension
- IoT Extension
- Extending Legacy Business Processes

Maximum score possible for this course: 360 points.

The candidate scored 317 points (88%) by working on weekly assignments and taking a final exam.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Thomas Bieser
Instructor

Walldorf, February 27, 2017



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openSAP
open.sap.com

6.7 HANA8 - SAP HANA Cloud Databases (openSAP, 2022)

THE BEST RUN 

Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Ride the SAP HANA Wave: Fundamentals and Insights into Cloud Databases

Instructors: SAP HANA subject matter experts

This four-week online course was held from March 29 through April 27, 2022. It comprised 2 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Introduction to SAP HANA
- Data Integration and Modeling
- Architecture and Admin
- Advanced Topics (Optional Course Week)

Maximum score possible for this course: 180 points.

The candidate scored 168.3 points (93.5%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.



Michaela Laemmler
Head of openSAP



Brian Raver
VP SAP HANA & Database
Solution Management

Waldorf, Germany, April 19, 2022



Verify online: <https://open.sap.com/verify/xitag-sybur-leroc-bygol-menh>

openSAP
open.sap.com

6.8 AWS1 - Build Resilient Applications on SAP BTP with Amazon Web Services

THE BEST RUN 

Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Build Resilient Applications on SAP BTP with Amazon Web Services

Instructors: Experts from SAP BTP and AWS

This five-week online course was held from October 31 through December 13, 2023. It comprised 3-5 hours of learning effort per week, 5 weekly assignments, and 1 final exam.

The course covered the following topics:

- Basics of SAP Business Technology Platform and AWS
- Building Apps with Low-Code/No-Code and AWS
- Building Pro-Code Apps on SAP BTP and AWS
- Advanced Concepts of SAP BTP and AWS
- Building Integration Scenarios

Maximum score possible for this course: 300 points.

The candidate scored 234.3 points (78.1%) by working on weekly assignments and taking a final exam.



Maxwell Wessel
Chief Learning Officer,
SAP Learning



Anirban Majumdar
Head of T&I Platform
Adoption & Advisory

Walldorf, Germany, December 6, 2023



Verify online: <https://open.sap.com/verify/xepof-mydor-hamaf-culef-vegel>

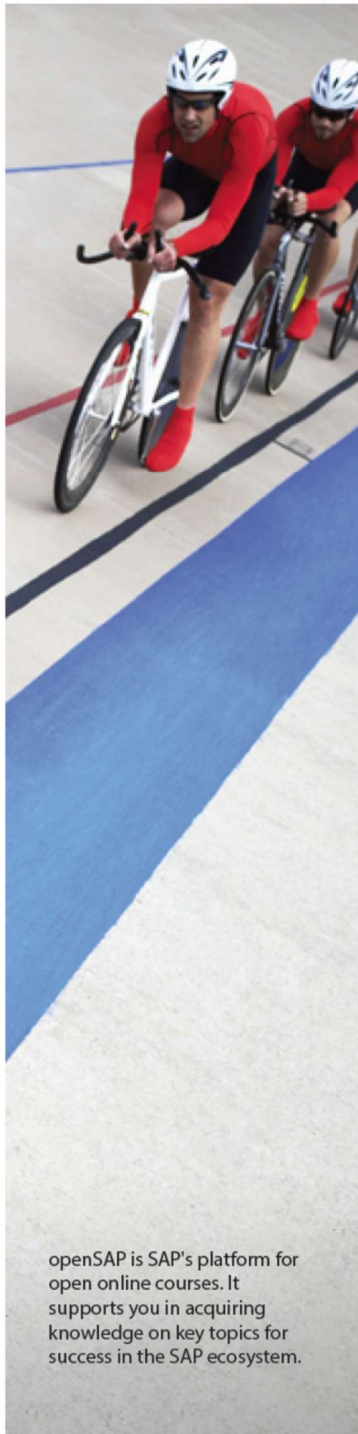
openSAP
open.sap.com

7 SAP Business Suite 4 SAP HANA (SAP S/4HANA)

7.1 S4H2 - SAP S/4HANA Deep Dive



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

SAP S/4HANA – Deep Dive

Instructors: Featuring SAP S/4HANA experts

This four-week online course was held from June 16 through July 21, 2015 and covered the following topics:

- Why SAP S/4HANA?
- Getting Started with SAP S/4HANA
- Adopt and Move to SAP S/4HANA
- Migration, Consulting, & Support

Maximum score possible for this course: 240 points.

The candidate scored 237 points (99%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement & Transformation

Sven Denecken
GVP Strategy & Co-Innovation
SAP S/4HANA
Products & Innovation

Walldorf, July 2015

openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.



Verify online: <https://open.sap.com/verify/xorig-gipen-legem-rovem-fyzig>



7.2 S4H3 - SAP S/4HANA Use Cases



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
SAP S/4HANA – Use Cases

Instructors: Sven Denecken and Bert Schulze

This three-week online course was held from November 4 through December 3, 2015. It comprised 3 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- Intro & SAP S/4HANA Use Cases (1)
- SAP S/4HANA Use Cases (2)
- Business Driver & Value Lever Framework

Maximum score possible for this course: 180 points.

The candidate scored 180 points (100%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement &
Transformation

Sven Denecken
GVP, Strategy and
Co-Innovation SAP
S/4HANA, SAP SE

Bert Schulze
VP, Strategy and
Co-Innovation SAP
S/4HANA, SAP SE

Waldorf, December 2015



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openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

7.3 S4H4 - Implementation of SAP S/4HANA



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Implementation of SAP S/4HANA

Featuring experts from SAP Scale, Enablement & Transformation teams

This four-week online course was held from March 8 through April 13, 2016. It comprised 3-4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Adoption Fundamentals
- System Conversion and Innovation
- New Cloud Implementation
- New On-Premise Implementation

Maximum score possible for this course: 240 points.

The candidate scored 237 points (99%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President
SAP Scale, Enablement & Transformation

Elvira Wallis
SVP & Chief Product Owner Packaged Solutions
SAP Scale, Enablement and Transformation

Walldorf, April 2016



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openSAP

7.4 S4H5 - Find Your Path to SAP S4HANA



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
Find Your Path to SAP S/4HANA

Instructors: Featuring experts from Product Management
and Co-Innovation for SAP S/4HANA

This four-week online course was held from January 25 through March 02, 2017. It comprised 3-4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- SAP S/4HANA 1610 Release Highlights
- A Fresh Start with SAP S/4HANA
- Converting Your SAP ERP System
- Landscape Transformation

Maximum score possible for this course: 240 points.

The candidate scored 233 points (97%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 5% of the course participants.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Sven Denecken
Instructor

Bert Schulze
Instructor

Walldorf, February 25, 2017



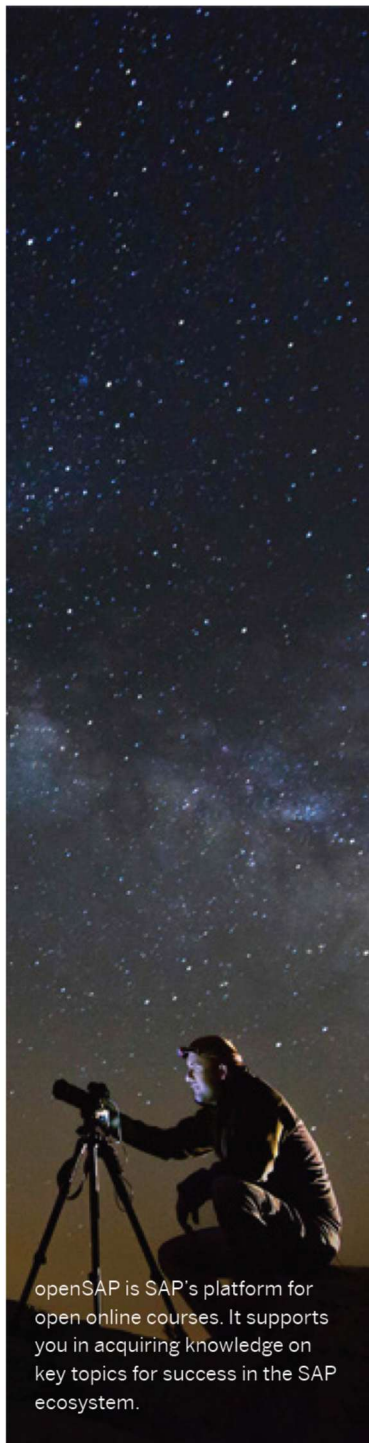
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7.5 S4H6 - Leverage SAP S4HANA Cloud



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

How to Best Leverage SAP S/4HANA Cloud for Your Company

Instructors: Featuring experts from Product Management and Co-Innovation for SAP S/4HANA

This four-week online course was held from June 7 through July 13, 2017. It comprised 3-4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- SAP S/4HANA Cloud Solution
- Use Cases Along Business Priorities
- SAP S/4HANA Cross-Topics
- SAP S/4HANA Cloud Deployment

Maximum score possible for this course: 240 points.

The candidate scored 230.5 points (96.0%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Bert Schulze
Instructor

Walldorf, July 9, 2017



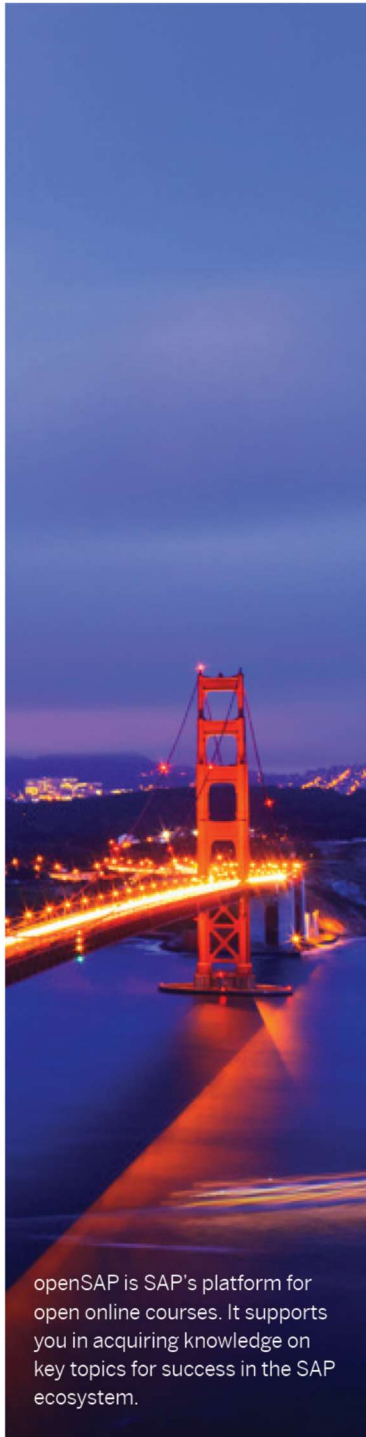
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7.6 S4H11 - System Conversion to SAP S/4HANA (2018)



Record of Achievement



openSAP is SAP's platform for open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:
System Conversion to SAP S/4HANA
Featuring experts from the SAP S/4HANA Regional Implementation Group

This four-week online course was held from October 10 through November 15, 2018. It comprised 3-4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Fundamentals and Technical Tooling
- Converting Finance and Business Partner
- UX and Main Impacts on Functional Side – Logistics
- Technical Topics and Project Management

Maximum score possible for this course: 240 points.

The candidate scored 214.5 points (89.4%) by working on weekly assignments and taking a final exam.

Dr. Bernd Welz
Executive Vice President and
Chief Knowledge Officer
SAP Products & Innovation

Lars Rueter
Head of SAP S/4HANA Regional
Implementation Group –
APJ Region

Walldorf, Germany, November 10, 2018



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7.7 SH34 - SAP S/4HANA UX for Business and Functional Experts (2023)



Record of Achievement



openSAP is SAP's platform for massive open online courses. It supports you in acquiring knowledge on key topics for success in the SAP ecosystem.

Markus Werkmeister

E-mail: markus@werkmeister.com

has participated in the following openSAP course:
SAP S/4HANA UX for Business and Functional Experts

Instructors: Experts from the SAP S/4HANA Regional Implementation Group

This four-week online course was held from November 7 through December 13, 2023. It comprised 4 hours of learning effort per week, 4 weekly assignments, and 1 final exam.

The course covered the following topics:

- Managing UX Change with SAP Fiori
- Fitting UX to Your Business Process
- Introducing Intelligent Experiences to Business
- Making Adoption Easy for Your Business Users

Maximum score possible for this course: 240 points.

The candidate scored 222.0 points (92.5%) by working on weekly assignments and taking a final exam.

The candidate belongs to the top 10% of the course participants.

Maxwell Wessel
Chief Learning Officer,
SAP Learning

Lars Rueter
Head of SAP S/4HANA Regional
Implementation Group -
APJ Region

Waldorf, Germany, December 5, 2023



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7.8 MOD1 - SAP Model Company (2020)



Record of Achievement



Markus Werkmeister

Date of birth: March 26, 1969
E-mail: markus@werkmeister.com

has successfully completed the following openSAP course:

Getting Started with SAP Model Company

Instructors: SAP Model Company Experts

This three-week online course was held from January 21 through February 19, 2020. It comprised 3-4 hours of learning effort per week, 3 weekly assignments, and 1 final exam.

The course covered the following topics:

- SAP Model Company Fundamentals
- Deploying SAP Model Company
- Leveraging SAP Model Company in Your Projects

Maximum score possible for this course: 180 points.

The candidate scored 161.0 points (89.4%) by working on weekly assignments and taking a final exam.

Michaela Laemmler
Head of openSAP

Stephan Klein
Head of SAP Model Company

Walldorf, Germany, February 11, 2020



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8 SAP Solution Manager, NetWeaver, SOA

8.1 SMI310 - SAP Solution Manager Einführungstools im Detail

TEILNAHMEBESTÄTIGUNG

Walldorf, den 16.11.2011

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 14. November 2011 bis 16. November 2011.

SMI310 SAP Solution Manager: Einführungstools im Detail

Veranstaltungsinhalt:

- * Sie erkunden die wichtigsten Konzepte vom SAP Solution Manager im Rahmen von einem Einführungs-Projekt
- * Verstehen Sie wie der SAP Solution Manager die Konzepte von Application Lifecycle Management (ALM) unterstützt
- * Definition eines Projekts mit der Dokumentation der Systemlandschaft für die Implementation der Lösung
- * Erstellen und dokumentieren des Projekt-Umfangs einschließlich ihrer geschäftlichen Anforderungen
- * Konfiguration vom Projekt-Umfang
- * Organisieren, durchführen und dokumentieren aller projektrelevanten Testaktivitäten
- * Verwenden Sie Roadmaps als die zugrunde liegende Methodik des Projekts
- * Weitere Berichte zur Unterstützung von Projekt-Management-Aktivitäten
- * Richtiger Umgang mit Problem-Meldungen in Implementierungsprojekten
- * Sie erhalten einen Eindruck davon, wie SAP Solution Manager die Wartung Ihrer produktiven Umgebung unterstützt
- * Zusätzliche Informationen zu weiteren Implementationsthemen wie Templates Management, Solution Documentation Assistant und Business Process Change Analyzer
- * Sie bekommen technischen Hintergrund- Informationen für Ihre erforderlich Projekt Rolle

SAP Deutschland AG & Co. KG
SAP Education

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8.2 SAPNW - SAP NetWeaver Überblick

TEILNAHMEBESTÄTIGUNG

Walldorf, den 09.09.2011

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 07. September 2011 bis 09. September 2011.

SAPNW SAP NetWeaver - Überblick

Veranstaltungsinhalt:

- * Der Gedanke von SOA und die Einbettung in die Business Process Plattform (BPP)
- * SAP NetWeaver Application Server ABAP und JAVA als Application Plattform von SAP NetWeaver
- * Architektur von SAP NetWeaver Process Integration (ehemals Exchange Infrastructure)
- * Business Process Management in SAP NetWeaver
- * Information Integration mit SAP NetWeaver Komponenten
- * Stammdatenmanagement mit SAP NetWeaver Master Data Management
- * SAP NetWeaver Enterprise Portal: Anwendungsintegration und Wissensmanagement
- * Life Cycle Management mit SAP Solution Manager

SAP Deutschland AG & Co. KG
SAP Education

THE BEST-RUN BUSINESSES RUN SAP



8.3 SOA100 - SAP Enterprise SOA Fundamentals

TEILNAHMEBESTÄTIGUNG

12 März 2012

Herr Markus Werkmeister

hat an der Veranstaltung teilgenommen
vom 12.03.2012 bis 14.03.2012 .

SOA100 SAP Enterprise SOA Fundamentals

Veranstaltungsinhalt:

- * Enhancement Packages, Business Functions and Service Enabling
- * Service Architecture Modeling with Process Integration Tools
- * SAP NetWeaver Business Process Management
- * SAP Solution Composer, Solution Manager and Integration of ARIS

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Education**

50.014.423 (04/06)

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