Table of Modules

Modules and associated Courses	Semester	Assessment Types and Requirements	Student Workload (in hours)		ECTS Credits	Module Coordinator
			Contact hours (Teaching hours)	Self-Study (hours)		
1. Module „Service Technology and Diagnostics"	1	K180+E			12	Honorary Professor Dipl. Ing. Norbert Grawunder
1. Service Technology and dedicated Processes	1		60	120	6	
2. Diagnostic and dedicated Processes incl. Laboratory	1		60	120	6	
2. Module „Workshop Technology and Logistics“	1	K 150			9	Prof. Dr.-Ing. Kai Wundram
1. Logistics and Spare Part Management	1		60	120	6	
2. Concepts of Workshops	1		30	60	3	
3. Module „Project Management and Training”	1	K 120+P			9	Prof. Dr. Mike Hoffmeister
1. Global Service Training	1	K 120	30	60	3	
2. Technical Project Management Service	1		30	60	3	
3. Project I: Intercultural Competence	1	P	45	45	3	
4. Module „Technical Product Quality“	2	K 150			9	Prof. Dr.-Ing. Kai Wundram
1. Technical Product Monitoring and Optimization	2		60	120	6	
2. Product Influencing	2		30	60	3	

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Modules and associated Courses	Semester	Assessment Types and Requirements	Student Workload (in hours)		ECTS Credits	Module Coordinator
			Contact hours (Teaching hours)	Self-Study (hours)		
5. Module „Management“	2	K 180			12	Prof. Dr. Mike Hoffmeister
1. International Strategic Management	2		45	75	4	
2. Quality Management	2		45	75	4	
3. Business Management	2		45	75	4	
6. Module „Service Quality“	2	K90+P			9	Prof. Dr. Ing. Kai Wundram
1. Service Quality and Organization	2	K90	60	120	6	
2. Project II: Real Case	2	P	30	60	3	
7. Module „Vehicle Communcation Technology“	3	K120+E			6	Honorary Professor Dipl. Ing. Norbert Grawunder
1. Infotainment, Driver Assistance Systems incl. Telematics	3		30	60	3	
2. Automotive Communication Systems	3		30	60	3	
8. Module „Internship and Master’s Thesis”	3				24	
In Total					90	

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Module Descriptions

Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Module 1: Service Technology and Diagnostics

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
1	annually	1 Semester 8 SWS	mandatory	12	360 h (120 Contact hours + 240 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
	ASTP	K180 + E	Lecture, Exercises, Laboratories	Honorary Professor Dipl. Ing. Norbert Grawunder

Learning Outcomes

In two separate courses (Diagnostic and Dedicated Processes including Laboratories, Service Technology and Dedicated Processes), students are taught the various tasks and responsibilities involved in service technology.

In the course "Service Technology and Dedicated Processes" the methods, tools, and influencing factors used by automobile manufacturers, importers, and workshops are explained. The associated cross-departmental, cross-company, and cross-country processes are presented, and the interaction of these factors is illustrated through examples. After successful completion of the course, students will be able to evaluate, design, and implement service technology and the related processes holistically, taking into account corporate strategy and country-specific characteristics. Instead of laboratories, day excursions are conducted.

A key area of functional and fault analysis in vehicles is electronic vehicle diagnostics, which is covered in the course "Diagnostic and Dedicated Processes including Laboratories." The (ISO-standardized) communication concept between the diagnostic tester and the vehicle is taught in detail, supported by examples, and practically examined in the laboratory. This is followed by an introduction to the concept of on-board diagnostics of control units and the off-board evaluation of on-board diagnostic results using the tester. Furthermore, fault cause and fault location identification using intelligent search algorithms is taught and also reinforced through laboratory experiments. Upon completion of the course, students will be able to interpret diagnostic communication with technically sound knowledge and design on-board diagnostic procedures.

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Curriculum Content
➢ Definition of service technology within the strategic orientation of a company ➢ Service technology processes at manufacturers, importers, and dealers ➢ Knowledge management in a global network ➢ Electronic diagnostic methods and procedures based on international standards ➢ Diagnostic objects (complete vehicle, vehicle system, functional unit, replaceable unit, fault source; electrical and electronic components, integration of mechanical and hydraulic components) ➢ Creation of diagnostic processes (on-board, off-board, interfaces, acceptance processes, global coordination, alternative procedures) ➢ Design, development, and execution of diagnostics in laboratory exercises Recommended Reading: ➢ Patton, Joseph & Bleuel, William H.: After the Sale: How to Manage Product Service for Customer Satisfaction and Profit, The Solomon Press, 2000, ISBN: 0-934623-63-5 ➢ Liker, Jeffery & Meier, Davic: Toyota Talent: Developing Your People the Toyota Way, McGraw-Hill, 2007, ISBN: 978-0-07-147745-1 ➢ ICFAI University Press (Hrsg.): Service Lifecycle Management: Transforming the After Sales Service, ICFAI University Press, Hyderabad, 2006, ISBN: 8-13140-078-6 ➢ Marscholik, Christoph & Subke, Peter: Road Vehicles – Diagnostic Communication, Hüthig Verlag, 2008, ISBN: 978-3-7785-4048-0 ➢ Goß, Stefan: Informationssicherheit in Automobilen, Shaker Verlag, 2009, ISBN: 978-3-8322-8050-5 ➢ Winkelhake, Uwe: Die digitale Transformation der Automobilindustrie: Treiber – Roadmap – Praxis, Springer Vieweg, 3., vollständig überarbeitete Auflage, 2024, ISBN: 978-3-662-67715-3

Courses		
Lecturer	**Course Title**	**SWS**
Dipl. Ing. Michael Poschmann	Service Technology and dedicated Processes	4
Honorary Professor Dipl. Ing. Norbert Grawunder	Diagnostic and dedicated Processes incl. Laboratories	4

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Module 2: Conceptions of Workshops and Logistics

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
1	annually	1 Semester 6 SWS	mandatory	9	270 h (90 Contact hours + 180 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
Work experience and knowledge of business processes	ASTP	K150	Lecture with integrated exercises	Prof. Dr.-Ing. Kai Wundram

Learning Outcomes

The course teaches students about the functions and interactions within workshops and the various levels of the distribution organizations between manufacturer and importer from the perspective of service organizations. Focusing on successful service delivery from the customer's viewpoint, students learn essential tasks, functions, and preparatory activities related to the serviceability of automobiles and the necessary tools and equipment. A key emphasis is placed on developing service readiness for new products and the integrated fault rectification process using key performance indicators and other control variables.

Based on practical examples, company workflows and organizational structures within car dealerships and at the interface to the importer are illustrated. Students will be able to identify and measure logistics key figures and propose demand-oriented solutions. They gain proficiency in spare parts management, including its strategic orientation and practical implementation.

Curriculum Content

Definition of service technology and service quality with a focus on service organization, workshop organization, workshop structures and equipment, core service processes, and extended service processes for special editions. Best practices from global service operations considering country-specific cultural behaviors are presented. The course covers IT systems for communication with importers and manufacturers, dealer management and workshop planning systems, cost structures of service operations, service readiness, and fault rectification processes.

Additional topics include logistics concepts, information systems, total quality management (TQM), Lean Production exemplified by Toyota, spare parts management, and control unit version management.

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Recommended Reading:

- http://eur-lex.europa.eu
- DIN EN ISO 9000:2015-11
- DIN EN ISO 9000:2015-11, 2015
- Ihme, J.: Logistik im Automobilbau: Logistikkomponenten und Logistiksysteme im Fahrzeugbau, Carl Hanser Verlag, München, 2006
- Hecker, Hurth & Seeber: After Sales in der Automobilwirtschaft, Autohaus Buch, 3. Auflage, 2017, ISBN: 978-3-574-60087-6
- Töpfer, Michael: Handbuch Kundenmanagement, Springer Verlag, 3., vollständig überarbeitete und erweiterte Auflage 2008, ISBN: 978-3-540-22062-6
- Patton, Joseph & Bleuel, William H.: After The Sale: How to Manage Product Service for Customer Satisfaction and Profit, The Solomon Press, 2000, NY USA, ISBN: 0-934623-63-5
- Liker, Jeffery & Meier, Davic: Toyota Talent: Developing Your People the Toyota Way, McGraw-Hill, 2007, ISBN: 978-0-07-147745-1
- ICFAI University Press (Hrsg.): Service Lifecycle Management: Transforming the After Sales Service, ICFAI University Press, Hyderabad, 2006, ISBN: 8-13140-078-6
- J.D. Power Report (www.jdpower.com)
- Khurmi, R. S. & Gupta, J. K.: A Textbook of Workshop Technology: Manufacturing Processes, S. Chand Publishing 2010, ISBN-13: 978-8121905133
- Lai, Kee-hung & Cheng, T. C. E.: Just-in-Time Logistics, überarbeitete digitale Ausgabe, Taylor & Francis, 2016, ISBN: 978-1-317-09972-3
- Stubbe, Marcel; Pier, Marcus; Dupont, Stephanie: Digitalisierung für Mensch und Organisation im Aftersales, in: Aurich, Jan C.: Bedarfsgerechte Digitalisierung von Produktionsunternehmen, Synnovating, 2020, S. 89–100, ISBN: 978-3-948038-05-5

Courses		
Lecturer	**Course Titel**	**SWS**
Prof. Dr.-Ing. Kai Wundram	Logistics and Spare Part Management	4
Dipl. Ing. Michael Poschmann	Conceptions of Workshops	2

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Module 3: Project Management and Training

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Work Load
1	annually	1 Semester 7 SWS	mandatory	9	270 h (135 Contact hours + 135 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination (Requirement for the Award of Credit Points)	Teaching and Learning Methods	Module Coordinator
Work experience and knowledge of business processes	ASTP	K120 + P	Lecture with integrated exercises	Prof. Dr. Mike Hoffmeister

Learning Outcomes

In the introductory course, students from different nations are sensitized to the importance of tolerance, acceptance, and understanding of people from other cultural backgrounds. This builds upon the communication skills developed during their undergraduate studies. At the same time, the team-building process of the intercultural student group is initiated.

Students develop an understanding of other cultures and behaviors based on their own professional experiences. They acquire basic knowledge of various communication models and learn to apply them to different cultural contexts. The course introduces the concept of culture and cultural dimensions. Students gain skills in intercultural communication that enable them to avoid or resolve culture-related conflicts effectively.

They also gain insight into the goals and responsibilities of a globally oriented training organization. They become familiar with relevant techniques and tools, can evaluate their applicability in different cultural environments, and are able to design training concepts.

Furthermore, students learn about methods, tools, and influencing factors in project management. They are able to plan, coordinate, and implement projects while taking intercultural challenges into account.

Curriculum Content

- Definition and models of communication and the concept of culture; values, patterns, and cultural dimensions

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- Verbal and non-verbal communication
- Aspects, methods, and models of intercultural communication
- Models of conflict management
- Activities and methods of team development
- Strategic alignment of training in a globally operating company; applied systems and techniques; training categories such as technical training, non-technical training, IT training; didactics, teaching methods, learning strategies, and cultural environment; practical execution of a training session
- Introduction and discussion of project management methods and tools
- Illustration of interdisciplinary relationships and their impact on project management
- Presentation and discussion of international trends and scenarios

Recommended Reading:

- Hiller, Gundula Gwenn; Zillmer-Tantan, Ulrike; Fattohi, Reema (Hrsg.): Interkulturelle Kompetenz online vermitteln, Springer VS, 1. Auflage, 2024, ISBN: 978-3-658-40409-3
- Hofstede, Gert Jan; Pedersen, Paul; Hofstede, Geert: Exploring Culture: Exercises, Stories and Synthetic Cultures, Intercultural Press, 1. Auflage, 2002, ISBN: 978-1-877864-90-2
- Hofstede, Gert Jan; Hofstede, Geert; Minkov, Michael: Cultures and Organizations: Software of the Mind – Intercultural Cooperation and Its Importance for Survival, McGraw-Hill, 3. Auflage, 2010, ISBN: 978-0-07-166418-9
- Jandt, Fred E.: Intercultural Communication: A Global Reader, SAGE Publications, 11. Auflage, 2024, ISBN: 978-1-0718-3539-7
- Cooper, Pamela J.; Calloway-Thomas, Carolyn; Simonds, Cheri J.: Intercultural Communication: A Text with Readings, Pearson, 1. Auflage, 2007, ISBN: 978-0-205-48470-0
- Luthans, Fred; Doh, Jonathan P.; Gaur, Ajai S.: International Management: Culture, Strategy, and Behavior, McGraw-Hill Education, 12. Auflage, 2023, ISBN: 978-93-90290-40-2
- Lewis, Richard D.: When Cultures Collide: Leading Across Cultures, Nicholas Brealey Publishing, 4. Auflage, 2018, ISBN: 978-1-4736-8480-7
- Kotler, Philip; Keller, Kevin Lane; Opresnik, Marc Oliver: Marketing-Management: Konzepte – Instrumente – Unternehmensfallstudien, Pearson Studium, 16. Auflage, 2022, ISBN: 978-3-86894-443-3
- Hofstede, Gert Jan; Pedersen, Paul; Hofstede, Geert: Exploring Culture: Exercises, Stories and Synthetic Cultures, Intercultural Press, 1. Auflage, 2002, ISBN: 978-1-877864-90-2
- Hofstede, Gert Jan; Hofstede, Geert; Minkov, Michael: Cultures and Organizations: Software of the Mind, McGraw-Hill, 3. Auflage, 2010, ISBN: 978-0-07-166418-9
- Jandt, Fred E.: Intercultural Communication: A Global Reader, SAGE Publications, 11. Auflage, 2024, ISBN: 978-1-0718-3539-7
- Cooper, Pamela J.; Calloway-Thomas, Carolyn; Simonds, Cheri J.: Intercultural Communication: A Text with Readings, Pearson, 1. Auflage, 2007, ISBN: 978-0-205-48470-0
- Voss, Chris A.; K. A. S. Ramesh; T. J. Heizer: Global Project Management Handbook: Planning, Organizing, and Controlling International Projects, McGraw-Hill Education, 2. Auflage, 2006, ISBN: 978-0-07-146045-3
- Hobbs, Peter: Professionelles Projektmanagement, Hanser Verlag, 3. Auflage, 2002, ISBN: 978-3-478-86021-5
- Luthans, Fred; Doh, Jonathan P.; Gaur, Ajai S.: International Management: Culture, Strategy, and Behavior, McGraw-Hill Education, 12. Auflage, 2023, ISBN: 978-93-90290-40-2
- Lewis, Richard D.: When Cultures Collide: Leading Across Cultures, Nicholas Brealey Publishing, 4. Auflage, 2018, ISBN: 978-1-4736-8480-7
- McElroy, Mark W.: The New Knowledge Management: Complexity and Sustainable Innovation, Kogan Page, 2002, ISBN: 978-0-7494-4245-0

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- Firestone, Joseph M.; McElroy, Mark W.: Key Issues in the New Knowledge Management, KMCI Press, 2003, ISBN: 978-1-930324-07-7
- Drucker, Peter F.; Garvin, David A.: Knowledge Management, Harvard Business Review, 2003, ISBN: 978-1-59139-146-2
- Spitzer, Manfred: Lernen, Gehirnforschung und die Schule des Lebens, Verlag Hans Huber, 2010, ISBN: 978-3-456-84948-9
- Mittelmann, Angelika: Werkzeugkasten Wissensmanagement, Hanser Fachbuch, 2010, ISBN: 978-3-446-42637-7
- Mittelmann, Angelika: Wissensmanagement wird digital, 1. Auflage, Hanser Verlag, 2020, ISBN: 978-3-446-46362-5

Courses		
Lecturer	**Course Title**	**SWS**
Dipl. Wi.-Ing. Frank Harmeling	Global Service Training	2
Dipl.-Wi.-Ing. Frank Harmeling	Technical Project Management Service	2
Prof. Dr. Mike Hoffmeister	Project I: Intercultural Competence	3

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Modul 4: Technical Product Quality

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
2	annually	1 Semester 6 SWS	mandatory	9	270 h (90 Contact study + 180 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
Work experience and knowledge of business processes	ASTP	K150	Lecture with integrated exercises	Prof. Dr.-Ing. Kai Wundram

Learning Outcomes

The aim of the two courses is to provide students with in-depth knowledge of product liability, product monitoring/quality observation, and the associated processes — from the identification and analysis of product issues in the market, through risk assessment and the definition of appropriate measures, to the implementation and monitoring of these measures in the market. These aspects are considered both from a legal warranty perspective and in terms of customer retention. The course builds on the systems-oriented competencies acquired during undergraduate studies.

Upon successful completion, students will understand the interactions between automotive manufacturers, importers, dealerships, and customers, as well as the related process chains. They are familiar with the legal framework, in particular with warranty, guarantee, and goodwill regulations. Moreover, they have acquired knowledge of methods and procedures for analyzing, sustainably resolving, and preventing quality issues — and are able to apply them effectively.

Building on the knowledge and understanding gained in a Bachelor's-level engineering degree, students will gain a comprehensive understanding of how product-related decision-making significantly contributes to competitiveness in automotive engineering. They will learn how optimizing repair methods and product design can reduce a vehicle’s operating costs (TCO – Total Cost of Ownership), thereby increasing the manufacturer's competitiveness. Students will be able to contribute productively to the relevant processes using practical, applied knowledge.

Curriculum Content

- Discussion of the interrelationships between product monitoring and quality analysis
- Product liability, warranty, guarantee, and goodwill
- Product monitoring, corrective measures, product behavior after market release, risk assessments, overarching and market-specific criteria, recall procedures
- Statistical significance in the context of quality monitoring

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- Objectives and tasks of product influence, the importance of service-oriented vehicle development for customer satisfaction
- Development and evaluation of service-optimized solutions
- Calculation of Total Cost of Ownership (TCO) using various vehicle models

Recommended Reading:

- Börcsök, Josef: Functional Safety: Basic Principles of Safety-related Systems, 2. überarbeitete Auflage, Hüthig Verlag, 2025, ISBN: 978-3-7785-2986-7
- Börcsök, Josef: Functional Safety Systems, Hüthig Verlag 2004, ISBN: 978-3-7785-2944-7
- Goß, Stefan: Data Security, Brake-block for Driver Information Systems in Cars, FISITA World Congress: The Future of Automobiles and Mobility, Munich 2008
- Prof. Dr. Willi Diez : Das Management der Cost of Ownership, http://www.ifa-info.de
- Wilson, Nigel J.: EV Economics: Understanding the Total Cost of Ownership of Electric Vehicles, Kindle-Ausgabe, 2003, ASIN: B0C6QK7B1
- Uchimaru, Kiyoshi: TQM for Technical Groups: Total Quality Principles for Product Development, 1993

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Courses		
Lecturer	**Course Title**	**SWS**
Prof. Dr.-Ing. Kai Wundram	Technical Product Monitoring and Optimization	4
Dipl. Kfm. Björn Hammerling	Product Influencing	2

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Modul 5: Management

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
2	annually	1 Semester 9 SWS	mandatory	12	360 h (135 Contact study + 225 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
Work experience and knowledge of business processes	ASTP	K180	Lecture with integrated exercises	Prof. Dr. Mike Hoffmeister

Learning Outcomes

In three interrelated courses, students become familiar with various methods and fields of management and apply them using the instrumental competencies gained in their undergraduate studies.

Students learn the key tools of corporate management and are able to apply them across different industries. They understand the challenges of corporate leadership and can use various strategic analysis tools to assess both the internal and external environments. Students have a basic understanding of different leadership concepts and are capable of applying them to various situations.

Students are able to evaluate international market opportunities and risks, as well as the strengths and weaknesses of global companies, and derive targeted corporate strategies. International, market-oriented management concepts are developed. Students are familiar with the different levels of strategy development and can apply them to global companies. They are also able to assess different market entry strategies.

In the course "Quality Management," students are introduced to the strategic and organizational aspects of quality assurance and customer orientation. They know the objectives, tasks, and key performance indicators of quality assurance, and understand their practical application through real-world examples.

Curriculum Content

Curriculum Content (aligned with qualification objectives)

- Introduction to Global Management – The driving forces of globalization

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- Analysis and evaluation of international framework conditions and (mega) trends
- Development of an (international) corporate strategy
- Aspects of global marketing management (marketing mix, buyer behavior, marketing planning, segmentation, and positioning)
- Content, specifics, and differentiation between leadership and management
- Corporate ethics and culture
- Development of a comprehensive quality management concept
- Conducting quality meetings (analysis and evaluation of practical examples)
- Quality management in the automotive industry
- Quality Function Deployment (QFD)
- Process Management

Recommended Reading:

- Luthans, Fred; Doh, Jonathan P.; Gaur, Ajai S.: International Management: Culture, Strategy, and Behavior, McGraw-Hill Education, 12. Auflage, 2023, ISBN: 978-93-90290-40-2
- David, Fred R.: Strategic Management: A Competitive Advantage Approach, Concepts and Cases, 18. Auflage, Pearson, 2023, ISBN: 978-0137963188
- Hofstede, Gert Jan; Hofstede, Geert; Minkov, Michael: Cultures and Organizations: Software of the Mind, McGraw-Hill, 3. Auflage, 2010, ISBN: 978-0-07-166418-9
- Ebner, M.: Positive Leadership. Leading successfully with PERMA-Lead: The five keys to high performance, Springer, 2019, ISBN: 978-3-030-18768-3
- Ebner, M.: Positive Leadership in Action: Tools, Techniques & Best Practice, 1. Auflage, Springer, 2021, ISBN: 978-3-030-61960-6
- Dronnen, Michael: Positive Leadership: Using Positive Psychology for a Better Workplace Culture, Springer, 2022, ISBN: 978-3-030-85153-8
- Tate, David N.: Learn, Enjoy, Flow and Grow: Using the Principles of Positive Psychology to Help Find Passion and Meaning in Life, Verlag: Positive Psychology Press 2020, ISBN: 978-0955625190
- Seligman, Martin: Authentic Happiness: Using the New Positive Psychology to Realize Your Potential for Lasting Fulfillment, Free Press 2017, ISBN: 978-1-4767-6895-5,
- Niemiec, Robert E.: The Power of Character Strengths: Appreciate and Ignite Your Positive Personality, Via Media 2019, ISBN: 978-1-64324-028-5
- Deming, W. Edwards: Out of the Crisis, MIT Press 2000, ISBN: 978-0-262-54158-9
- Deming, W. Edwards: The New Economics, MIT Press 2018, 3. Auflage, ISBN: 978-0262535939
- Imai, Masaaki: KAIZEN, McGraw-Hill 1986, ISBN: 978-0075543329
- Goldratt, Eliyahu Michael & Cox, Jeff: The Goal: A Process of Ongoing Improvement, 40. Auflage, North River Press 2024, ISBN: 978-0884273004
- Oess, Attila: Total Quality Management: Die ganzheitliche Qualitätsstrategie, 3. Auflage, Hanser Verlag 1993, ISBN: 978-3446204589
- Bureau of Indian Standards (BIS): IS 14978:2002 – New Seven Tools for Quality Management, Bureau of Indian Standards, 2002, kostenloser PDF-Download über law.resource.org
- Roock, Stefan: Innovative agile Teamkonzepte: Mehr Flow und Geschwindigkeit in der Produktentwicklung, dpunkt Verlag, 2025, ISBN: 978-3-98890-222-1
- Zornek, Walter: Strategisches Management Reloaded: Denken, Handeln und Führen in unsicheren Zeiten, Haufe-Lexware GmbH & Co. KG, 2024

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Courses		
Lecturer	**Course Title**	**SWS**
Prof. Dr. Mike Hoffmeister	International Strategic Management	3
Dipl.-Ing. Matthias Portugall	Quality Management	3
Prof. Dr. Mike Hoffmeister	Business Management	3

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Modul 6: Servicequalität (Service Quality)

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
2	annually	1 Semester, 6 SWS	mandatory	9	270 h (90 Contact study + 180 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
Projectmanagement and Training	ASTP	K90+P	Lecture with integrated exercises	Professor Dr.-Ing. Kai Wundram

Learning Outcomes

The objective is to enable students to understand the relationship between corporate strategy, customer satisfaction, and service quality. Students know the goals, tasks, and key performance indicators of service quality and can apply various quality tools to simple examples.

Students are familiar with the challenges of the transition to electromobility and the associated service concepts. They are also acquainted with common market research studies used in the automotive industry, including their focus, differences, and purposes. Students gain a thorough understanding of the issue of repeat repairs, know the various definitions, and understand how to analyze this topic in the market and derive corrective actions.

Participants are able to evaluate selected international example markets in terms of service quality and derive measures to improve service quality. Upon successful completion of the courses, students will be capable of measuring, identifying, analyzing service quality issues, and proposing corrective actions. Furthermore, students will possess solid foundational knowledge of automotive market research, enabling them to transfer this expertise to other thematic areas.

Curriculum Content

- Discussion of the relationships between corporate strategy and customer satisfaction
- Identification of the drivers of customer satisfaction (product, sales, and after-sales)
- Introduction to service quality (objectives, tasks, and key performance indicators)
- Presentation of after-sales quality tools (customer surveys, workshop tests, DIN-ISO standards, etc.)
- Discussion of service quality measurement methods (CSS, IACS, J.D. Power)
- After-sales concepts in the era of electromobility

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- Exploration of the repeat repairs aspect (importance, analyses, tools, and corrective actions) and the after-sales defect resolution process
- Discussion of international examples for improving customer satisfaction and service quality

Implementation of the learning content from the completed lectures using a concrete real case from the automotive industry in connection with the topic of service quality (customer loyalty). Students learn how to successfully manage and present projects.

- Analysis methods, planning, and presentation techniques
- The respective project, including project partners and clients, is introduced in the first lecture

Recommended Reading:

- J.D. Power: J.D. Power Report ISO 9000:2015, J.D. Power and Associates, abgerufen von http://www.jdpower.com/
- Pfeifer, Tilo; Schmitt, Robert (Hrsg.): Handbuch Qualitätsmanagement, 7., überarbeitete Auflage, Hanser Fachbuch 2021, ISBN: 978-3-446-46230-4
- IDELSEY – Initiative for Diagnosis of Electronic Systems in Motor Vehicles for PTI, Europäische Kommission, Generaldirektion Mobilität und Verkehr, 2008, URL: http://ec.europa.eu/transport
- ISO 9001:2015, Website: www.iso.org
- Kunas, Michael: Implementing Service Quality based on ISO/IEC 20000: A Management Guide, 3. Auflage, 2012, ISBN: 978-1-84928-442-4
- Schmuntzsch, Ulrike; Shajek, Alexandra; Hartmann, Ernst Andreas (Hrsg.): New Digital Work II: Digital Sovereignty of Companies and Organizations, Springer Nature Switzerland, 2025, ISBN: 978-3-031-69994-8
- Voss, Chris A.; K. A. S. Ramesh; T. J. Heizer: Global Project Management Handbook: Planning, Organizing, and Controlling International Projects, McGraw-Hill Education, 2. Auflage, 2006, ISBN: 978-0-07-146045-3
- Yang, Jan Y.; Gu, Yunyi; Tan, Zi Ling: Chinese Electric Vehicle Trailblazers: Navigating the Future of Car Manufacturing (Business Guides on the Go), Springer International Publishing 2023, ISBN-10: 303125144X

Courses		
Lecturer	**Course Title**	**SWS**
Dipl.-Kfm. Björn Hammerling	Service Quality and Organization	4
Dipl.-Wi.-Ing. Frank Harmeling	Project II: Real Case	2

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Module 7: Vehicle Communication Technology

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
3	annually	1 Semester, 4 SWS	mandatory	6	180 h (60 Contact study + 120 Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
Module: Service Technology and Diagnostics	ASTP Master	K120 + E	Lecture, Exercises, Laboratories	Honorary Professor Dipl. Ing. Norbert Grawunder

Learning Outcomes

Preliminary Explanation:
Passenger cars and light commercial vehicles are equipped with multiple driver information systems, a number that is steadily increasing. These systems are divided into pure comfort information systems (infotainment) and driver assistance systems. The systems utilize information from various electronic components in the vehicle, whose data is transmitted via bus systems.

Objectives & Competencies:
Participation in this module enables students to assess driver assistance and infotainment systems in terms of their functionality, applicability, and susceptibility to faults. Furthermore, students will understand and be able to design these systems for various applications within vehicle development.

Additionally, competencies in the analysis, modeling, planning, and application of electronically networked computer structures in vehicles are taught. Students learn about the most important data buses as well as embedded systems and their potential applications in the automotive sector. The focus lies on the ability to integrate these systems into functioning architectures, evaluate the possibilities and limitations of their applications, and actively contribute to the corresponding development processes in the automotive industry or support them as project managers.

Curriculum Content

The module conveys the characteristics of various infotainment and driver assistance systems from the perspectives of system functionality, data processing, data communication, and user interface design (HMI – Human Machine Interface). In addition to customer-facing functions, potential malfunctions are illustrated, and modern fault analysis methods are taught and deepened in a

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practical laboratory exercise. Furthermore, the aspect of data communication is examined in more detail and also reinforced through practical experiments.

In Detail:

- Infotainment, driver assistance, and telematics systems: structure, functionality, characteristics, and variants, algorithms for data evaluation and processing
- Data communication: low-speed and high-speed bus systems up to 150 Mbit/s (concept, data objects, communication behavior) including CAN, LIN, MOST, FlexRay, Ethernet, Inter-bus communication (bridges, routers, gateways)

Recommended Reading:

- Held, Gilbert: Inter- and Intra-Vehicle Communications, Auerbach Publications, 2007, ISBN-13: 978-1-4200-5221-3

Courses		
Lecturer	**Course Title**	**SWS**
Dipl. Ing. Martin Konz	Infotainment, Driver Assistance and Telematic	2
Honorary Professor Dipl. Ing. Norbert Grawunder	Automotive Communication Systems	2

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Ostfalia University of Applied Sciences
Study Program **Master Automotive Service Technology and Processes**

Master's Thesis and Colloquium

Semester	Frequency of Offering	Duration	Type	ECTS Credits	Student Workload
3	-	Laut MPO, 16 SWS	mandatory	24	720 h (Self-Study)

Prerequisites	Applicability	Type and Duration of Examination	Teaching and Learning Methods	Module Coordinator
Passing all module examinations (cf. examination regulations)	ASTP	Refer to the examination regulations (MPO)	Independent Work	Honorary Professor Dipl. Ing. Norbert Grawunder

Learning Outcomes

Students are expected to apply their acquired knowledge and skills to engineer a topic independently, write a scientific report in the form of a technical paper, and present their findings.

Curriculum Content

Course: Master's Thesis

Practical phase in industry/research:

Students acquire the theoretical and/or practical, specialized knowledge of their field of study.

To do this, they independently work on a professional topic within an industrial company or a research institution over a fixed period of six months (see Master's Examination Regulations). During this phase, they apply their knowledge in new and unfamiliar practical situations, using the theories, principles, and methods they have learned, as well as their own ideas, to develop solutions to problems or further develop arguments.

Master's Thesis:

The Master's Thesis documents this or a comparable scientific achievement in written form according to the regulations specified in [1]. It is credited with 15 ECTS, and the obligatory oral defense (colloquium) is credited with 1 ECTS.

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Course: Colloquium
In the colloquium, the candidate is given the opportunity to demonstrate that they are able to independently address interdisciplinary and problem-oriented questions from the field of study on a scientific basis and to deepen the results of their work in an academic discussion.
The evaluation of the student's work is conducted in accordance with the examination regulations and with due consideration of [2].

Recommended Reading**:**

[1] Fakultät Fahrzeugtechnik (Hrsg.): "Leitfaden *‚Erstellen wissenschaftlicher Arbeiten'"*. Ostfalia Hochschule für angewandte Wissenschaften, Wolfsburg, 2011
[2] Arbeitsgruppe Servicetechnik und –prozesse (Hrsg.): "Richtlinie zur Beurteilung studentischer Arbeiten". Wolfsburg, 2012
Prüfungsausschuss der Fakultät Fahrzeugtechnik (Hrsg.): "M0 Ablaufplan ‚Master-Thesis'". Ostfalia Hochschule für angewandte Wissenschaften, Wolfsburg, 2010

Courses		
Lecturer	**Course Title**	**SWS**
Lecturers of the degree programme and professors of Ostfalia University of Applied Sciences in accordance with the examination regulations (MPO)	Internship, Master's Thesis and Colloquium	16

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List of Abbreviations

Abbreviation	Meaning
ASTP	Study program Master „Automotive Service Technologies and Processes“
CAN	Controller Area Network (a vehicle bus standard)
E	Ergänzungsleistung/Ergänzende Prüfungsform (additional assessment component, e.g., oral examination or presentation)
ECTS	European Credit Transfer and Accumulation System
h	hours
ISO	International Organization for Standardization
IT	Information Technology
K	Klausur (Written Exam) K180 = Written Exam (180 Minutes)
LV	Lehrveranstaltung (Course / Lecture)
MPO	Modulprüfungsordnung (Module and Examination Regulations)
P	Projektarbeit (Project Work)
QFD	Quality Function Deployment
TCO	Total Cost of Ownership
TQM	Total Quality Management
SWS	Semesterwochenstunden (hours per week during the semester)

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