HAWK
HOCHSCHULE
FÜR ANGEWANDTE WISSENSCHAFT UND KUNST
Hildesheim/Holzminden/Göttingen
University of Applied Sciences and Arts

Prüfungsordnung für die Bachelorstudiengänge Elektrotechnik/Informationstechnik, Physikalische Ingenieurwissenschaften, Präzisionsmaschinenbau sowie Technische Informatik und Robotik (Besonderer Teil)

Fakultät Ingenieurwissenschaften und Gesundheit
POBT 2021 (F 2026)

Die Prüfungsordnung Besonderer Teil für die Bachelorstudiengänge Elektrotechnik/Informationstechnik, Physikalische Ingenieurwissenschaften, Präzisionsmaschinenbau vom 2. März 2021, ergänzt um den Bachelorstudiengang Technische Informatik und Robotik (jeweils ohne und mit Praxisverbund) am 14. Juni 2023, in der Fassung vom 13. Mai 2026 tritt gemäß Fakultätsratsbeschluss vom 13. Mai 2026 und Genehmigung des Präsidiums vom 23. Juni 2026 nach ihrer hochschulöffentlichen Bekanntmachung in Kraft. Die hochschulöffentliche Bekanntmachung erfolgte am 29. Juni 2026.

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§ 1 Dauer und Verlauf des Studiums

(1) Das Studium beginnt im Wintersemester. Der Studienablauf ist in der Anlage 1 festgelegt.

(2) Die Regelstudienzeit (Studium ohne Praxisverbund) beträgt sechs Semester in Vollzeit. Das Studium ist grundsätzlich teilzeitgeeignet. Einzelheiten zum Teilzeitstudium auf Antrag regelt die Immatrikulationsordnung.

(3) Die Studiengänge können auch im Praxisverbund studiert werden. Die Regelstudienzeit im Praxisverbund beträgt acht Semester in Teilzeit. Der Studienablauf gemäß Anlage 1 wird entweder mit einer Ausbildung (IHK) in einem Unternehmen kombiniert und die Studieninhalte des ersten und zweiten Semesters auf die ersten vier Semester verteilt (Modell A). Alternativ wird bei einem Studium im Praxisverbund eine sonstige Vereinbarung mit einem Unternehmen über ingenieurnahe berufspraktische Aufgaben (Modell B) geschlossen und die Studieninhalte des ersten und zweiten Semesters werden auf die ersten sechs Semester verteilt. Die Prüfungsverwaltung der Fakultät stellt eine Liste von Unternehmen zur Verfügung, die im Praxisverbund teilnehmen.

(4) In das Bachelorstudium ist ein achtwöchiges Praxisprojekt integriert. Es wird mit einer Praxisprojektarbeit abgeschlossen.

(5) Der Gesamtumfang beträgt 180 Leistungspunkte (Credits). Der Anteil der Pflicht- und Wahlpflichtmodule für den jeweiligen Studiengang ist Anlage 1 zu entnehmen. Studierende müssen aus dem Angebot der zentralen Einrichtung HAWK plus (IPS) Lehrveranstaltungen im Umfang von sechs Credits auswählen.

§ 2 Prüfungs- und Studienleistungen, Zulassung zu Prüfungen

(1) Die Modulprüfungen sowie Art und Anzahl der ihnen zugeordneten Prüfungs- und Studienleistungen, der Prüfungsvorleistungen und die Credits der einzelnen Module sind in der Anlage 1 festgelegt. Benotete Module gehen mit dem Gewicht der Credits in die Gesamtnote ein. Die Gewichtung innerhalb der Modulprüfung ergibt sich aus Anlage 1. Falls keine Gewichtung angegeben ist, ergibt sich eine Gewichtung zu gleichen Teilen.

(2) Die Bearbeitungszeit einer Prüfung legt die bzw. der Prüfer*in fest, bei Nichtfestlegung gilt eine Bearbeitungsdauer von 13 Wochen.

(3) Die Teilnehmerzahl für bestimmte Lehrveranstaltungen kann in begründeten Ausnahmefällen beschränkt werden, wenn dies im Hinblick auf einen geordneten Studienbetrieb erforderlich ist.

(4) Bei der Teilnahme an Lehrveranstaltungen haben die Studierenden, für deren Semester die Lehrveranstaltungen vorgesehen sind, und die Wiederholer*innen Vorrang.

(5) Ist eine Studienleistung als Prüfungsvorleistung (PVL) vorgesehen, so ist das Bestehen dieser Prüfungsvorleistung neben dem Vorliegen der Voraussetzungen gemäß § 8 des Allgemeinen Teils der Prüfungsordnung für die Zulassung zur notenbildenden Modulabschlussprüfung erforderlich.

(6) Für Studierende ohne Praxisverbund gilt: Zu den Modulprüfungen des dritten und vierten Semesters wird zugelassen, wer in den Modulprüfungen des ersten und zweiten Semesters (Anlage 1) mindestens 40 Credits erreicht hat. Für Studierende mit Praxisverbund gilt: Zu den Modulprüfungen des dritten und vierten Semesters wird zugelassen, wer in den Modulprüfungen des ersten und zweiten Semesters (Anlage 1) mindestens 24 Credits erreicht hat. Für alle Studierende gilt: Zu den Modulprüfungen ab einschließlich des fünften Semesters wird zugelassen, wer alle Modulprüfungen des ersten und zweiten Semesters bestanden hat.

(7) Die Abmeldung von der Prüfung kann bis 48 Stunden vor der Prüfung von den Studierenden elektronisch über das Studienportal erfolgen.

(8) Die Zulassung zur Praxisprojektphase setzt voraus, dass
- das Vorpraktikum gemäß Richtlinie und
- ein auf die Erstellung wissenschaftlicher Arbeiten vorbereitendes Wahlpflichtmodul gemäß Aushang absolviert wurde.

(9) Ergänzend zu § 15 Absatz 2 der Prüfungsordnung Allgemeiner Teil gilt: Es kann eine einzige bestandene Modulprüfung zum Zwecke der Notenverbesserung einmal zur Wiederholung angemeldet werden; dies gilt nicht für die Abschlussarbeit. Es kann nur eine solche Prüfung wiederholt werden, die im ersten Prüfungsversuch bestanden wurde. Die Wiederholungsprüfung ist in der gleichen Art und Dauer zum nächstmöglichen Prüfungstermin wahrzunehmen. Es gilt die bessere der beiden erreichten Noten. Das Recht, den Notenverbesserungsversuch wahrzunehmen, erlischt bei Bekanntgabe der Note der letzten offenen Modulprüfung oder bei einer Abmeldung.

§ 3 Pflichtmodule, Wahlpflichtmodule, Wahl eines Studienschwerpunktes

(1) Jeder Studiengang besteht aus Pflicht- und Wahlpflichtmodulen und ggf. aus Wahlpflichtmodulen mit Studienschwerpunktzuordnung (siehe Anlage 1). Die Modulprüfungen der Pflichtmodule werden in jedem Prüfungszeitraum angeboten.

(2) Die Prüfungskommission legt die Auswahl der Wahlpflichtmodule fest und kann ggf. zusätzliche Wahlpflichtmodule festlegen. Die angebotenen Wahlpflichtmodule werden zu Semesterbeginn in der Prüfungsverwaltung per Aushang sowie elektronisch veröffentlicht. Zusätzlich stehen alle Pflichtmodule anderer Studiengänge gemäß Anlage 1 als Wahlpflichtmodule zur Verfügung.

(3) Wahlpflichtmodule ohne zugeordneten Studienschwerpunkt können durch maximal zwei Studienarbeiten im Umfang von jeweils drei Credits ersetzt werden.

(4) Studierende des Bachelorstudiengangs Präzisionsmaschinenbau müssen zudem Wahlpflichtmodule mit Studienschwerpunktzuordnung im Umfang von 24 Credits einbringen. Werden Wahlpflichtmodule eines Studienschwerpunkts (Konstruktion oder Produktion) im Umfang von mindestens 18 Credits belegt, so kann der entsprechende Studienschwerpunkt in den Abschlussdokumenten ausgewiesen werden.

(5) Studierende des Bachelorstudiengangs Elektrotechnik/Informationstechnik müssen zudem Wahlpflichtmodule mit Studienschwerpunktzuordnung im Umfang von 12 Credits einbringen. Werden Wahlpflichtmodule eines Studienschwerpunkts (Automatisierungstechnik oder Ingenieurinformatik) im Umfang von mindestens 12 Credits belegt, so kann der entsprechende Studienschwerpunkt in den Abschlussdokumenten ausgewiesen werden.

(6) Zur Ausweisung des Studienschwerpunkts in der Bachelorurkunde und in dem Bachelorzeugnis (Muster siehe Anlage 2 bzw. 3) ist dieser bei der Anmeldung zur Bachelorabschlussarbeit anzugeben.

(7) Wahlpflichtmodule mit zugeordnetem Studienschwerpunkt werden einmal pro Studienjahr angeboten. Ihre Modulprüfungen werden in jedem Prüfungszeitraum angeboten. Abkündigungen dieser Module erfolgen mit mindestens einem Studienjahr Vorlauf.

(8) Wahlpflichtmodule mit vergleichbaren Prüfungsinhalten dürfen nicht mehrfach belegt werden.

§ 4 Bachelorarbeit und Kolloquium

(1) Die Zulassung zur Bachelorabschlussarbeit setzt voraus, dass mindestens 144 Credits aus Modulen bis einschließlich des fünften Fachsemesters und alle Studien- und Prüfungsleistungen bis einschließlich des vierten Fachsemesters (siehe Studienverlaufsplan, Anlage 1) erbracht sind.

(2) Zum Kolloquium wird zugelassen, wer alle anderen Module des Studiengangs (inkl. Bachelorpraxisprojekt) erfolgreich absolviert und die Bachelorarbeit vorläufig bestanden hat. Dem Antrag auf Zulassung zur Bachelorabschlussarbeit ist ein Vorschlag für den Themenbereich, dem das Thema der Bachelorabschlussarbeit entnommen werden soll, beizufügen. Die Abgabe der Arbeit kann frühestens sieben und muss spätestens neun Wochen nach Ausgabe des Themas erfolgen. Bei externen Zweitprüfenden müssen zusammen mit der Anmeldung die Kontaktdaten der bzw. des Zweitprüfenden angegeben werden.

(3) Abweichend zu § 21 Absatz 9 der Prüfungsordnung Allgemeiner Teil wird geregelt: Ziel des Kolloquiums ist es, die selbstständige Erstellung der Abschlussarbeit sicherzustellen und Fach- und Verständnisfragen zu klären. Die Abschlussarbeit ist nach Durchführung des Kolloquiums abschließend unter Einbeziehung des Ergebnisses des Kolloquiums durch beide Prüfenden jeweils eigenständig und unabhängig nachvollziehbar in schriftlicher Form zu bewerten. § 14 Absatz 2 bis 4 gelten entsprechend.

§ 5 Hochschulgrad, Zeugnis

Die Studiengänge schließen mit der Bachelorprüfung ab. Nach bestandener Bachelorprüfung verleiht die Hochschule den Hochschulgrad Bachelor of Engineering (abgekürzt B.Eng.) Darüber stellt die Hochschule eine Urkunde nach Anlage 2 mit dem Datum des Zeugnisses nach Anlage 2 aus. Gleichzeitig mit dem Zeugnis wird den Studierenden ein englisches Diploma Supplement der jeweils aktuellen HRK-Vorlage entsprechend (Anlage 4) ausgehändigt.

§ 6 Inkrafttreten und Übergangsregelungen

(1) Diese Prüfungsordnung tritt zum Wintersemester 2026/27 in Kraft und gilt für alle immatrikulierten Studierenden.

(2) Für die Bachelorstudiengänge Elektrotechnik/Informationstechnik, Physikalische Ingenieurwissenschaften und Präzisionsmaschinenbau (mit und ohne Praxisverbund) tritt die vorliegende Prüfungsordnung mit Ablauf des Sommersemesters 2029 (30.09.2029) außer Kraft; für den Bachelorstudiengang Technische Informatik und Robotik (ohne und mit Praxisverbund) besteht sie fort.
Danach erfolgt in der Regel eine Überführung in die neue Prüfungsordnung des Bachelorstudiengangs Ingenieurwissenschaften. Über Ausnahmen, insbesondere Härtefälle, entscheidet auf begründeten Antrag, der spätestens innerhalb von drei Monaten nach Überführung zu stellen ist, die Prüfungskommission. Bei der Überführung werden die in dem gleichen Modul erfolglos unternommenen Versuche, eine Prüfung abzulegen, auf die Wiederholungsmöglichkeiten angerechnet.

Anlage 1: Modulübersichten und Modelle Praxisverbund

(1) Bachelorstudiengang Elektrotechnik/Informationstechnik

		Prüfungsart		Credits/Semester					
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6					
Ba 1 – 031	Physik 1	K2	LP	6					
Ba 1 – 021	Informatik 1	K2	LP	6					
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP	6					
Ba 1 – 041	Technische Mechanik 1 - Statik	K2		6					
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6				
Ba 2 – 031	Physik 2	K2	LP		6				
Ba 2 – 021	Informatik 2	K2	LP		6				
Ba 2 – 051	Elektronik 1	K2	LP		6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2	LP		6				
Ba 3 – 011	Mathematik 3	K2 / K1+K1				6			
Ba 3 – 023	Kommunikationstechnik	K2 / M / LS	LP			6			
Ba 3 – 033	Elektrotechnik 2	K2 / K1+K1	LP			6			
Ba 3 – 043	Mikroprozessortechnik	K2	EDRP			6			
Ba 3 – 052	Elektronik 2	K2	LP			6			
Ba 4 – 012	Regelungstechnik	K2	LP				6		
Ba 4 – 024	Algorithmen und Datenstrukturen	K2					6		
Ba 4 – 034	Digitale Signalverarbeitung	K2 / M / LS	LP				6		
Ba 4 – 044	Mess- und Sensortechnik	K2 / K1+K1	LP				6		
	Studienschwerpunkte								
	Wahlpflichtmodule(SP) mit Studienschwerpunktzuordnung						6	6	
Ba 5 – 022	Projektmanagement	K1						3	
Ba 5 – 021	Technisches Englisch		K1/PA/P					3	
	Individuelles Profilstudium (HAWK plus)							6	
	Wahlpflichtmodule							12	
Ba 6 – 011	Bachelorpraxisprojekt	EA / ST/ E / EDRP							15
BA 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA+ Koll (inkl. PR)							12+ 3
	Summe			**30**	**30**	**30**	**30**	**30**	**30**

Erläuterungen und Abkürzungen siehe Seite 18.

(2) Bachelorstudiengang im Praxisverbund Elektrotechnik/Informationstechnik, Modell A*

		Prüfungsart		Credits, Prozent/Semester							
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6							
Ba 1 – 031	Physik 1	K2	LP	6							
Ba 1 – 021	Informatik 1	K2	LP	6							
	Berufspraxisphase, 1. Sem.			40%							
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6						
Ba 2 – 031	Physik 2	K2 + LP			6						
Ba 2 – 021	Informatik 2	K2	LP		6						
	Berufspraxisphase, 2. Sem.				40%						
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP			6					
Ba 1 – 041	Technische Mechanik 1 – Statik	K2				6					
	Berufspraxisphase, 3. Sem.					60%					
Ba 2 – 051	Elektronik 1	K2	LP				6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2	LP				6				
	Berufspraxisphase, 4. Sem.						60%				
Ba 3 – 011	Mathematik 3	K2 / K1+K1						6			
Ba 3 – 023	Kommunikationstechnik	K2 / M / LS	LP					6			
Ba 3 – 033	Elektrotechnik 2	K2 / K1+K1	LP					6			
Ba 3 – 043	Mikroprozessortechnik	K2	EDRP					6			
Ba 3 – 052	Elektronik 2	K2						6			
Ba 4 – 012	Regelungstechnik	K2	LP						6		
Ba 4 – 024	Algorithmen und Datenstrukturen	K2							6		
Ba 4 – 034	Digitale Signalverarbeitung	K2 / M / LS	LP						6		
Ba 4 – 044	Mess- und Sensortechnik	K2/ K1+K1	LP						6		
	Studienschwerpunkte										
	Wahlpflichtmodule(SP) mit Studienschwerpunktzuordnung								6	6	
Ba 5 – 022	Projektmanagement	K1								3	
Ba 5 – 021	Technisches Englisch		K1/ PA/P							3	
	Individuelles Profilstudium (HAWK plus)									6	
	Wahlpflichtmodule									12	
Ba 6 – 011	Bachelorpraxisprojekt	EA / ST/ E/ EDRP									15
BA 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschluss-kolloquium	AA+ Koll (inkl. PR)									12+ 3
	Summe			**18**	**18**	**12**	**12**	**30**	**30**	**30**	**30**

*Erläuterungen und Abkürzungen sowie Informationen zu PV-Modell B: siehe Seite 18.

(3) Bachelorstudiengang Präzisionsmaschinenbau

		Prüfungsart		Credits/Semester					
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6					
Ba 1 – 031	Physik 1	K2	LP	6					
Ba 1 – 021	Informatik 1	K2	LP	6					
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP	6					
Ba 1 – 041	Technische Mechanik 1 - Statik	K2		6					
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6				
Ba 2 – 031	Physik 2	K2	LP		6				
Ba 2 – 021	Informatik 2	K2	LP		6				
Ba 2 – 051	Elektronik 1	K2	LP		6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2	LP		6				
Ba 3 – 011	Mathematik 3	K2 / K1+K1				6			
Ba 3 – 042	Fertigung (Metalle)	K2				6			
Ba 3 – 032	Konstruktion 1	K2 + LP				6			
Ba 3 – 022	Technische Mechanik 2 (Festigkeitslehre)	K2 / K1+K1 / K1+LP				6			
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2				6			
Ba 4 – 012	Regelungstechnik	K2	LP				6		
	Studienschwerpunkte								
	Wahlpflichtmodule(SP) mit Studienschwerpunktzuordnung						24		
Ba 5 – 022	Projektmanagement	K1						3	
Ba 5 – 021	Technisches Englisch		K1/PA/P					3	
	Individuelles Profilstudium (HAWK plus)							6	
	Wahlpflichtmodule							18	
Ba 6 – 011	Bachelorpraxisprojekt	EA / ST/ E/ EDRP							15
BA 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA+ Koll (inkl. PR)							12+ 3
	Summe			**30**	**30**	**30**	**30**	**30**	**30**

Erläuterungen und Abkürzungen siehe Seite 18.

(4) Bachelorstudiengang im Praxisverbund Präzisionsmaschinenbau, Modell A*

		Prüfungsart		Credits, Prozent/Semester							
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6							
Ba 1 – 031	Physik 1	K2	LP	6							
Ba 1 – 021	Informatik 1	K2	LP	6							
	Berufspraxisphase, 1. Sem.			40%							
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6						
Ba 2 – 031	Physik 2	K2 + LP			6						
Ba 2 – 021	Informatik 2	K2	LP		6						
	Berufspraxisphase, 2. Sem.				40%						
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP			6					
Ba 1 – 041	Technische Mechanik 1 – Statik	K2				6					
	Berufspraxisphase, 3. Sem.					60%					
Ba 2 – 051	Elektronik 1	K2	LP				6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2	LP				6				
	Berufspraxisphase, 4. Sem.						60%				
Ba 3 – 011	Mathematik 3	K2 / K1+K1						6			
Ba 3 –042	Fertigung (Metalle)	K2						6			
Ba 3 – 032	Konstruktion 1	K2 + LP						6			
Ba 3 – 022	Technische Mechanik 2 (Festigkeitslehre)	K2 / K1+K1 / K1+LP						6			
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2						6			
Ba 4 – 012	Regelungstechnik	K2	LP						6		
	Studienschwerpunkte										
	Wahlpflichtmodule(SP) mit Studienschwerpunktzuordnung								24		
Ba 5 – 022	Projektmanagement	K1								3	
Ba 5 – 021	Technisches Englisch		K1/PA/P							3	
	Individuelles Profilstudium (HAWK plus)									6	
	Wahlpflichtmodule									18	
Ba 6 – 011	Bachelorpraxisprojekt	EA /ST/ E/EDRP									15
BA 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA+ Koll (inkl. PR)									12+ 3
	Summe			**18**	**18**	**12**	**12**	**30**	**30**	**30**	**30**

*Erläuterungen und Abkürzungen sowie Informationen zu PV-Modell B: siehe Seite 18.

(5) Bachelorstudiengang Physikalische Ingenieurwissenschaften

		Prüfungsart		Credits/Semester					
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6					
Ba 1 – 031	Physik 1	K2	LP	6					
Ba 1 – 021	Informatik 1	K2	LP	6					
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP	6					
Ba 1 – 041	Technische Mechanik 1 - Statik	K2		6					
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6				
Ba 2 – 031	Physik 2	K2	LP		6				
Ba 2 – 021	Informatik 2	K2	LP		6				
Ba 2 – 051	Elektronik 1	K2	LP		6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2	LP		6				
Ba 3 – 011	Mathematik 3	K2 / K1+K1				6			
Ba 3 – 031	Atom- und Kernphysik	K2	LP			6			
Ba 3 – 021	Oberflächenphysik	K2				6			
Ba 3 – 041	Technische Optik	K2	LP			6			
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2				6			
Ba 4 – 011	Laserwerkstoffbearbeitung	K2					6		
Ba 4 – 034	Digitale Signalverarbeitung	K2 / M / LS	LP				6		
Ba 4 – 051	Experimentalphysik	EA					6		
Ba 4 – 021	Kohärente Optik	K2					6		
Ba 4 – 031	Spektroskopie	K2 + LP					6		
Ba 5 – 022	Projektmanagement	K1						3	
Ba 5 – 021	Technisches Englisch		K1/PA/P					3	
	Individuelles Profilstudium (HAWK plus)							6	
	Wahlpflichtmodule							18	
Ba 6 – 011	Bachelorpraxisprojekt	EA / ST/ E/ EDRP							15
Ba 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA+ Koll (inkl. PR							12 + 3
	Summe			**30**	**30**	**30**	**30**	**30**	**30**

Erläuterungen und Abkürzungen siehe Seite 18.

(6) Bachelorstudiengang im Praxisverbund Physikalische Ingenieurwissenschaften, Modell A*

		Prüfungsart		Credits, Prozent/Semester							
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6							
Ba 1 – 031	Physik 1	K2	LP	6							
Ba 1 – 021	Informatik 1	K2	LP	6							
	Berufspraxisphase, 1. Sem.			40%							
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6						
Ba 2 – 031	Physik 2	K2 + LP			6						
Ba 2 – 021	Informatik 2	K2	LP		6						
	Berufspraxisphase, 2. Sem.				40%						
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP			6					
Ba 1 – 041	Technische Mechanik 1 – Statik	K2				6					
	Berufspraxisphase, 3. Sem.					60%					
Ba 2 – 051	Elektronik 1	K2	LP				6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2	LP				6				
	Berufspraxisphase, 4. Sem.						60%				
Ba 3 – 011	Mathematik 3	K2 / K1+K1						6			
Ba 3 – 031	Atom- und Kernphysik	K2	LP					6			
Ba 3 – 021	Oberflächenphysik	K2						6			
Ba 3 – 041	Technische Optik	K2	LP					6			
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2						6			
Ba 4 – 011	Laserwerkstoffbearbeitung	K2							6		
Ba 4 – 034	Digitale Signalverarbeitung	K2 / M / LS	LP						6		
Ba 4 – 051	Experimentalphysik	EA							6		
Ba 4 – 021	Kohärente Optik	K2							6		
Ba 4 – 031	Spektroskopie	K2 + LP							6		
Ba 5 – 022	Projektmanagement	K1								3	
Ba 5 – 021	Technisches Englisch		K1/PA/P							3	
	Individuelles Profilstudium (HAWK plus)									6	
	Wahlpflichtmodule									18	
Ba 6 – 011	Bachelorpraxisprojekt	EA / ST/ E/ EDRP									15
Ba 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA + Koll (inkl. PR									12+ 3
	Summe			**18**	**18**	**12**	**12**	**30**	**30**	**30**	**30**

*Erläuterungen und Abkürzungen sowie Informationen zu PV-Modell B: siehe Seite 18.

(7) Bachelorstudiengang Technische Informatik und Robotik

		Prüfungsart		Credits/Semester					
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6					
Ba 1 – C040	Dynamik	K2	LP	6					
Ba 1 – 021	Informatik 1	K2	LP	6					
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP	6					
Ba 1 – 081	Einführung in die Robotik	PA	LP	6					
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6				
Ba 2 – B230	Technische Informatik	K2	LP		6				
Ba 2 – B130	Vertiefung Informatik	K1	LP		6				
Ba 2 – B220	Grundlagen Elektronik	K2	LP		6				
Ba 4 – 054	Rechnernetze und Betriebssysteme	K2 / PA+R	LP		6				
Ba 3 – C040	Numerische Mathematik	K2 / K1 + K1				6			
Ba 4 – 012	Regelungstechnik	K2	LP			6			
Ba 3 – 043	Mikroprozessortechnik	K1+PA / K2	EDRP/LP			6			
Ba 4 – 024	Algorithmen und Datenstrukturen	K2				6			
Ba 4 – 044	Mess- und Sensortechnik	K2 / K1+K1	LP			6			
Ba 4 – C010	BWL für Ingenieure	O+K1					6		
Ba 3 – 082	Hard- und Software Entwurfsmuster	K2	PL / LP				6		
Ba 4 – A220	Halbleiter und Digitalelektronik	K2	LP				6		
Ba 5 – 081	Autonome Systeme	PA	LP				6		
Ba 4 – A050	Antriebs- und Steuerungstechnik	K1 + K1	LP				6		
Ba 3 – C051	Wissenschaftliches Arbeiten		H/PA/M					3	
Ba 5 – 021	Technisches Englisch		K1/PA/P					3	
Ba 4 – 034	Digitale Signalverarbeitung	K2/M/LS	LP					6	
Ba 3 – 081	KI-basierte Bildanalyse	K2/M+PA/K1+PA	LP					6	
Ba 4 – A040	Embedded Systems	K2 / PA+R	LP					6	
	Individuelles Profilstudium (HAWK plus)							6	
Ba 6 – 011	Bachelorpraxisprojekt	EA/ST/ E/EDRP							15
Ba 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA + Koll (inkl. PR)							12 + 3
	Summe			**30**	**30**	**30**	**30**	**30**	**30**

Erläuterungen und Abkürzungen siehe Seite 18.

(8) Bachelorstudiengang im Praxisverbund Technische Informatik und Robotik, Modell B*

		Prüfungsart		Credits, Prozent/Semester							
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Ba 1 – 011	Mathematik 1	K2 / K1+K1		6							
Ba 1 – 021	Informatik 1	K2	LP	6							
Ba 1 – 081	Einführung in die Robotik	PA	LP	6							
	Berufspraxisphase 1. Sem.										
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6						
Ba 2 – B130	Vertiefung Informatik	K1	LP		6						
Ba 2 – B230	Technische Informatik	K2	LP		6						
Ba 1 – C040	Dynamik	K2	LP			6					
Ba 1 – 051	Elektrotechnik 1	K2 / K1+K1	LP			6					
	Berufspraxisphase 2. Sem.										
Ba 2 – B220	Grundlagen Elektronik	K2	LP				6				
Ba 4 – 054	Rechnernetze und Betriebssysteme	K2 / PA+R	LP				6				
	Berufspraxisphase 3. Sem.										
Ba 4 – 012	Regelungstechnik	K2	LP					6			
Ba 3 – C040	Numerische Mathematik	K2 / K1+K1						6			
Ba 3 – 043	Mikroprozessortechnik	K1+ PA/ K2	EDRP / LP					6			
Ba 4 – 024	Algorithmen und Datenstrukturen	K2						6			
Ba 4 – 044	Mess- und Sensortechnik	K2 / K1+K1	LP					6			
Ba 4 – C010	BWL für Ingenieure	O+K1							6		
Ba 3 – 082	Hard- und Software Entwurfsmuster	K2	PL/LP						6		
Ba 4 – A220	Halbleiter und Digitalelektronik	K2	LP						6		
Ba 5 – 081	Autonome Systeme	PA	LP						6		
Ba 4 – A050	Antriebs- und Steuerungstechnik	K1 + K1	LP						6		
Ba 3 – C051	Wissenschaftliches Arbeiten		H/PA/M							3	
Ba 5 – 021	Technisches Englisch		K1/PA/P							3	
Ba 4 – 034	Digitale Signalverarbeitung	K2/M/LS	LP							6	
Ba 3 – 081	KI-basierte Bildanalyse	K2 / M+PA / K1+PA	LP							6	
Ba 4 – A040	Embedded Systems	K2 / PA+R	LP							6	
	Individuelles Profilstudium (HAWK plus)									6	
Ba 6–011	Bachelorpraxisprojekt	EA/ST/E/ EDRP									15
Ba 6–021	Bachelorabschlussarbeit, Bachelorseminar mit Abschluss-kolloquium	AA + Koll (inkl. PR)									12+ 3
	Summe			**18**	**18**	**12**	**12**	**30**	**30**	**30**	**30**

*Erläuterungen und Abkürzungen siehe Seite 18.

(9) Studienschwerpunkte und deren zugeordnete Wahlpflichtmodule[(SP)]

In den Studiengängen Elektrotechnik/Informationstechnik und Präzisionsmaschinenbau besteht die Möglichkeit, sich bei entsprechender Belegung (gem. § 3 Absätze 4 und 5) maximal einen Schwerpunkt ausweisen zu lassen. Die Ausweisung mehrerer Schwerpunkte ist nicht möglich. Wird kein Schwerpunkt gewählt, sind Wahlpflichtmodule mit Studienschwerpunkt von Elektrotechnik/Informationstechnik oder Präzisionsmaschinenbau obligatorisch zu belegen.

Zusätzliche Wahlpflichtmodule mit zugeordnetem Studienschwerpunkt können gemäß § 3 von der Prüfungskommission festgelegt werden. Die jeweils aktuelle Liste aller Wahlpflichtmodule wird rechtzeitig zu Semesterbeginn in der Prüfungsverwaltung per Aushang sowie elektronisch veröffentlicht.

Wählbare Schwerpunkte Studiengang Elektrotechnik/Informationstechnik:

SP Automatisierungstechnik		**Prüfungsart**		**Credits/Semester**	
Modul-Nr.	**Modulname**	**PL**	**SL**	**4**	**5**
Ba 4 – A050	Antriebs- und Steuerungstechnik	K1+K1	LP	6	
Ba 4 – A040	Embedded Systems	K2 / R+PA	LP		6

SP Ingenieurinformatik		**Prüfungsart**		**Credits/Semester**	
Modul-Nr.	**Modulname**	**PL**	**SL**	**4**	**5**
Ba 4 – 054	Rechnernetze und Betriebssystem	K2 / PA+R	LP	6	
Ba 5 – 051	Userinterface-Programmierung	K1 + EDRP			6

Wählbare Schwerpunkte Studiengang Präzisionsmaschinenbau:

SP Konstruktion		**Prüfungsart**		**Credits/Semester**	
Modul-Nr.	**Modulname**	**PL**	**SL**	**4**	**5**
Ba 4 – 052	Konstruktion 2	K1+LP/K2		6	
Ba 4 – 042	Konstruktion 3	K2		6	
Ba 4 – 022	Technische Mechanik 3 (Dynamik)	K2 / PR		6	
Ba 4 – 032	Strömungslehre und Thermodynamik 2	K2 / PR		6	

SP Produktion		**Prüfungsart**		**Credits/Semester**	
Modul-Nr.	**Modulname**	**PL**	**SL**	**4**	**5**
Ba 4 – 023	Werkstofftechnik	K2	LP	6	
Ba 4 – 033	Qualitätsmanagement und Fertigungsmesstechnik	K1 + BÜ	LP	6	
Ba 4 – 053	Präzisionsfertigung	R		6	
Ba 4 – 043	Industrial Engineering und Fertigungsorganisation	K1 + BÜ		6	

(10) Erläuterungen/Abkürzungen

Abkürzung	Bezeichnung
BA	Bachelor
PL	Prüfungsleistung (benotet)
PVL	Prüfungsvorleistung
SL	Studienleistung (unbenotet)
AA	Abschlussarbeit
BÜ	Berufspraktische Übungen
E	Entwurf
EA	Experimentelle Arbeit
EDRP	Erstellung und Dokumentation von Rechnerprogrammen
K0,5/K1/K2	Klausur (0,5 Std./1 Std./2 Std.)
Koll	Kolloquium
LP	Laborpraktikum
M	Mündliche Prüfung
PA	Projektarbeit
PR	Präsentation
PV	Praxisverbund
R	Referat
SP	Wahlpflichtmodule mit zugeordnetem Studienschwerpunkt
ST	Studienarbeit
/	oder
Werden in einem Modul zwei Prüfungsleistungen erbracht, fließen diese zu gleichen Teilen in die Modulnote ein.	

(11) Modellvarianten für das Studium im Praxisverbund

- Modell A:
  Während der ersten zwei Studienjahre findet eine Facharbeiter*innen-Ausbildung (Externenprüfung vor der IHK) mit 40 bzw. 60 % Praxisanteil je Semester statt. Grundlage ist ein Rahmenvertrag zwischen einem Unternehmen und der Hochschule sowie eine Ausbildungsvereinbarung zwischen den Studierenden und Unternehmen.

- Modell B:
  Während der ersten drei Studienjahre können ingenieurnahe, berufspraktische Aufgaben in einem Unternehmen ausgeübt werden. Der Praxisanteil beträgt 40 bzw. 20 % je Semester. Grundlage ist der Abschluss einer Vereinbarung zwischen Studierenden und Unternehmen.

(12) Bachelorstudiengang im Praxisverbund, Beispiel Studienverlauf für Modell B

		Prüfungsart		Credits, Prozent/Semester							
Modul-Nr.	**Modulname**	**PL**	**SL**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Ba 1 – 011	Mathematik 1	K2/K1+K1		6							
Ba 1 – 031	Physik 1	K2	LP	6							
Ba 1 – 021	Informatik 1	K2	LP	6							
	Berufspraxisphase, 1. Sem.			40%							
Ba 2 – 011	Mathematik 2	K2 / K1+K1			6						
Ba 2 – 031	Physik 2	K2+LP			6						
Ba 2 – 021	Informatik 2	K2	LP		6						
	Berufspraxisphase, 2. Sem.				40%						
Ba 3 – 011	Mathematik 3	K2/K1+K1				6					
Ba 1 – 051	Elektrotechnik 1	K2/K1+K1	LP			6					
Ba 1 – 041	Technische Mechanik 1 – Statik	K2				6					
	Berufspraxisphase, 3. Sem.					40%					
Ba 4 – xxx	*Fachmodul des 4. Sem.*						6				
Ba 2 – xxx	*Fachmodul des 2. Sem.*						6				
Ba 2 – xxx	*Fachmodul des 2. Sem.*						6				
	Berufspraxisphase, 4. Sem.						40%				
Ba 3 – xxx	*Fachmodul des 3. Sem.*							6			
Ba 3 – xxx	*Fachmodul des 3. Sem.*							6			
Ba 3 – xxx	*Fachmodul des 3. Sem.*							6			
Ba 3 – xxx	*Fachmodul des 3. Sem.*							6			
	Berufspraxisphase, 5. Sem.							20%			
Ba 4 – xxx	*Fachmodul des 4. Sem.*								6		
Ba 4 – xxx	*Fachmodul des 4. Sem.*								6		
Ba 4 – xxx	*Fachmodul des 4. Sem.*								6		
Ba 4 – xxx	*Fachmodul des 4. Sem.*								6		
	Berufspraxisphase, 6. Sem.								20%		
Ba 5 – 022	Projektmanagement	K1								3	
Ba 5 – 021	Technisches Englisch		K1/PA/P							3	
	Individuelles Profilstudium (HAWK plus)									6	
	Wahlpflichtmodule									18	
Ba 6 – 011	Bachelorpraxisprojekt	EA / ST/ E/ EDRP									15
Ba 6 – 021	Bachelorabschlussarbeit, Bachelorseminar mit Abschlusskolloquium	AA + Koll (inkl. PR)									12 + 3
	Summe			**18**	**18**	**18**	**18**	**24**	**24**	**30**	**30**

Anlage 2: Bachelorurkunde (Muster)

BACHELORURKUNDE

Die HAWK
Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit

verleiht mit dieser Urkunde

«Vorname» «Nachname»

geboren am «Datum» in «Ort»

den Hochschulgrad **Bachelor of Engineering**
abgekürzt B.Eng.,
nachdem die Abschlussprüfung im Studiengang

«Studiengang»
«Studienschwerpunkt»

bestanden wurde.

Göttingen, den «Datum»

«Dekan*in»
Dekan*in

«Studiendekan*in»
Studiendekan*in

Anlage 3: Bachelorzeugnis (Muster)

BACHELORZEUGNIS

«Vorname» «Nachname»
geboren am «Geburtsdatum» in «Geburtsort»

hat die Bachelorprüfung im Studiengang

«Studiengang»
«Studienschwerpunkt»

der Fakultät Ingenieurwissenschaften und Gesundheit
bestanden.

Thema der Bachelorthesis:

	Credits	**Gesamtnote**
Gesamtbewertung	**ooo**	**o,o (in Worten)**

Die Gesamtnote ergibt sich aus den Modulnoten gemäß Anlage zum Bachelorzeugnis.

Göttingen, den «PruefDatum»

«Studiendekan*in»
Studiendekan*in

ANLAGE ZUM BACHELORZEUGNIS

Studiengang

Vorname Nachname

geboren am 00.00.0000 in «Ort»

Module	Credits	Note
Pflicht- und Wahlpflichtmodule		
		0,0
		0,0
		0,0
		0,0
		0,0
		0,0
		0,0
		0,0
		0,0
		0,0
Individuelles Profilstudium		
		0,0
		0,0
Bachelorarbeit		
		0,0

Gesamtnote

Anlage 4: Diploma Supplements (Muster)

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Elektrotechnik/Informationstechnik

2.2 Main field(s) of study for the qualification
Electrical Engineering/Information Technology

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The bachelor program covers a fundamental scientific and application-oriented education in the fields of electrical engineering, software engineering and computer science and is strongly related to practical scopes of work. In the first of three major

study sections compulsory modules cover basics of electrical engineering, electronics, computer science, software engineering, applied mathematics and physics. In addition students earn interdisciplinary competences in mechanical engineering and materials science. The second part includes the advanced mandatory modules microprocessor technology, communication technology, sensor and control engineering, algorithms and data structures. Advanced electrical engineering and electronics modules provide the necessary theoretical background in combination with modelling of technical systems and digital signal processing. The third part allows for specialisation. Depending on the choice of modules the course focuses on "Automatisierungstechnik" which requires electrical drives, control technology and embedded systems or "Ingenieurinformatik" which requires computer networks, operating systems and user interface programming, respectively. Additional elective non-technical modules are compulsory in order to gain interdisciplinary competences. During a practical project and the final bachelor thesis the students prove their capabilities to solve a given problem on their own.

4.3 Programme details, individual credits gained and grades/marks obtained
Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table
Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: …

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Document on the award of the academic degree	
(Bachelorurkunde)	**00.00.0000**
Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**
(Official Stamp / Seal)	Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Physikalische Ingenieurwissenschaften

2.2 Main field(s) of study for the qualification
Physical Engineering

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The program covers a fundamental scientific and practically-oriented education in the field of physical technologies and is strongly related to practical scopes of work. Mandatory introductory courses include basics of Experimental Physics as well as applied Mathematics, Material science and Mechanical Engineering. The students earn interdisciplinary and non-technical skills like Electrical and Electronically Engineering or project Management. In the second part of the studies the program offers more advanced mandatory courses in Optical Engineering, Atomic and Nuclear Physics, Spectroscopy, Laser Technologies as well as Surface Physics. A selection of elective technical courses allows the students to build up a personal emphasis on special physical and engineering subjects. Non-technical skills are improved by choosing elective courses like Presentation Techniques. The practical use of the knowledge gained in the courses is an essential part of the educational program. During an integrated project and the final Bachelor Thesis the students have to prove their ability to solve a certain problem on their own.

4.3 Programme details, individual credits gained and grades/marks obtained
Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table

Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: …

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Document on the award of the academic degree	
(Bachelorurkunde)	**00.00.0000**
Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**
(Official Stamp / Seal)	Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Präzisionsmaschinenbau

2.2 Main field(s) of study for the qualification
Mechanical Engineering/Precision Machining

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The programme covers a fundamental scientific and application-oriented education in Mechanical Engineering in the fields of Mechanical Design and Precision Manufacturing and is strongly related to the business professional work of mechanical engineers. Basic courses include Mathematics, Physics, Mechanics, Mechanical Engineering, and Design as well as Electronics, Electrical Engineering, and Control Engineering. The second part of studies includes more advanced courses in CAD/CAM/CAQ, Materials Technology and Manufacturing/Assembly as well as Mechanical Design and Development. Precision Machining and Assembly in Optics and Mechanics provide theoretical background with additional practical scopes of work. Moreover, the students acquire interdisciplinary and non-technical competences like basics in project management, business and soft skills. Non-technical skills are improved by choosing additional modules. Engineering principles are applied to real problems usually arising from research activities of the department or from industrial partners to develop skills and problem solving capacity in project engineering. The practical use of the knowledge gained in the course program is an essential part of the education. During an integrated practical period in the industry and the final practically-oriented Bachelor Thesis the students have to prove their capabilities to solve selected problems on their own.

4.3 Programme details, individual credits gained and grades/marks obtained

Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table
Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: …

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Document on the award of the academic degree (Bachelorurkunde)	**00.00.0000**
Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**

(Official Stamp / Seal)

Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

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1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Technische Informatik und Robotik

2.2 Main field(s) of study for the qualification
Computer Engineering and Robotics

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The bachelor program covers fundamental scientific and application-oriented education in the fields of computer engineering and robotics. The program has a high practical relevance.
In the first of two major study sections compulsory modules cover applied mathematics and physics and the basics in the field of electrical, computer and mechanical engineering in order to address interdisciplinary requirements. Introductory courses in robotics and computer sciences round off the range of courses. The second part includes the advanced mandatory modules microprocessor technology, software engineering, hardware description languages, artificial intelligence based image analysis, control engineering. Advanced electrical engineering and electronics modules provide the necessary theoretical background in combination with modelling of technical systems and digital signal processing, embedded drives, measurement and sensor technology and autonomous systems. Additional elective non-technical modules are compulsory in order to gain interdisciplinary competences. During a practical project and the final bachelor thesis the students prove their capabilities to solve a given problem on their own.

4.3 Programme details, individual credits gained and grades/marks obtained
Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table
Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: ...

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Document on the award of the academic degree (Bachelorurkunde)	**00.00.0000**
Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**

(Official Stamp / Seal)

Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Elektrotechnik/Informationstechnik (im Praxisverbund)

2.2 Main field(s) of study for the qualification
Electrical Engineering/Information Technology

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The bachelor program covers a fundamental scientific and application-oriented education in the fields of electrical engineering, software engineering and computer science and is strongly related to practical scopes of work. In the first of three major study sections compulsory modules cover basics of electrical engineering, electronics, computer science, software engineering, applied mathematics and physics. In addition students earn interdisciplinary competences in mechanical engineering and materials science. The second part includes the advanced mandatory modules microprocessor technology, communication technology, sensor and control engineering, algorithms and data structures. Advanced electrical engineering and electronics modules provide the necessary theoretical background in combination with modelling of technical systems and digital signal processing. The third part allows for specialisation. Depending on the choice of modules the course focuses on "Automatisierungstechnik" which requires electrical drives, control technology and embedded systems or "Ingenieurinformatik" which requires computer networks, operating systems and user interface programming, respectively. Additional elective non-technical modules are compulsory in order to gain interdisciplinary competences. During a practical project and the final bachelor thesis the students prove their capabilities to solve a given problem on their own.

4.3 Programme details, individual credits gained and grades/marks obtained

Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table
Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: …

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

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Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**

(Official Stamp / Seal)

Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Präzisionsmaschinenbau (im Praxisverbund)

2.2 Main field(s) of study for the qualification
Mechanical Engineering/Precision Machining

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The programme covers a fundamental scientific and application-oriented education in Mechanical Engineering in the fields of Mechanical Design and Precision Manufacturing and is strongly related to the professional work of mechanical engineers. Basic courses include Mathematics, Physics, Mechanics, Mechanical Engineering, and Design as well as Electronics, Electrical Engineering, and Control Engineering. The second part of studies includes more advanced courses in CAD/CAM/CAQ, Materials Technology and Manufacturing/Assembly as well as Mechanical Design and Development. Precision Machining and Assembly in Optics and Mechanics provide theoretical background with additional practical scopes of work. Moreover, the students acquire interdisciplinary and non-technical competences like basics in project management, business and soft skills. Non-technical skills are improved by choosing additional modules. Engineering principles are applied to real problems usually arising from research activities of the department or from industrial partners to develop skills and problem solving capacity in project engineering. The practical use of the knowledge gained in the course program is an essential part of the education. During an integrated practical period in the industry and the final practically-oriented Bachelor Thesis the students have to prove their capabilities to solve selected problems on their own.

4.3 Programme details, individual credits gained and grades/marks obtained

Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table
Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: …

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

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Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**

(Official Stamp / Seal) Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

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1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Physikalische Ingenieurwissenschaften (im Praxisverbund)

2.2 Main field(s) of study for the qualification
Physical Engineering

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The program covers a fundamental scientific and practically-oriented education in the field of physical technologies and is strongly related to practical scopes of work. Mandatory introductory courses include basics of Experimental Physics as well as applied Mathematics, Material science and Mechanical Engineering. The students earn interdisciplinary and non-technical skills like Electrical and Electronically Engineering or project Management. In the second part of the studies the program offers more advanced mandatory courses in Optical Engineering, Atomic and Nuclear Physics, Spectroscopy, Laser Technologies as well as Surface Physics. A selection of elective technical courses allows the students to build up a personal emphasis on special physical and engineering subjects. Non-technical skills are im-proved by choosing elective courses like Presentation Techniques. The practical use of the knowledge gained in the courses is an essential part of the educational program. During an integrated project and the final Bachelor Thesis the students have to prove their ability to solve a certain problem on their own.

4.3 Programme details, individual credits gained and grades/marks obtained
Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table

Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: …

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Document on the award of the academic degree	
(Bachelorurkunde)	**00.00.0000**
Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**
(Official Stamp / Seal)	Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

DIPLOMA SUPPLEMENT

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s)	**Nachname**	1.2	First name(s)	**Vorname**
1.3	Date of birth	**00.00.0000**	1.4	Student Identification number or code	**000000**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)
Bachelor of Engineering – B.Eng. Technische Informatik und Robotik (im Praxisverbund)

2.2 Main field(s) of study for the qualification
Computer Engineering and Robotics

2.3 Name and status of awarding institution (in original language)
HAWK Hochschule für angewandte Wissenschaft und Kunst
Hildesheim/Holzminden/Göttingen
Fakultät Ingenieurwissenschaften und Gesundheit (Faculty of Engineering and Health)
University of Applied Sciences and Arts / State Institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)
[as above]

2.5 Language(s) of instruction/examination
German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification
Bachelor programme, undergraduate, first degree, by research with thesis

3.2 Official duration of programme in credits and/or years
Three years, 6 semesters, 180 ECTS

3.3 Access requirement(s)
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. An eight-week pre-study internship (300 hours).

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of Study
Full Time Study
In the event of part-time study (individual application required), the official length of the programme will be extended accordingly.

4.2 Programme learning outcomes
The bachelor program covers fundamental scientific and application-oriented education in the fields of computer engineering and robotics. The program has a high practical relevance.
In the first of two major study sections compulsory modules cover applied mathematics and physics and the basics in the field of electrical, computer and mechanical engineering in order to address interdisciplinary requirements. Introductory courses in robotics and computer sciences round off the range of courses. The second part includes the advanced mandatory modules microprocessor technology, software engineering, hardware description languages, artificial intelligence based image analysis, control engineering. Advanced electrical engineering and electronics modules provide the necessary theoretical background in combination with modelling of technical systems and digital signal processing, embedded drives, measurement and sensor technology and autonomous systems. Additional elective non-technical modules are compulsory in order to gain interdisciplinary competences. During a practical project and the final bachelor thesis the students prove their capabilities to solve a given problem on their own.

4.3 Programme details, individual credits gained and grades/marks obtained
Please refer to the Certificate (Bachelorzeugnis) for a list of courses and grades.

4.4 Grading system and, if available, grade distribution table
Absolute grading scheme: “Sehr Gut” (1,0; 1,3) = Very Good; “Gut” (1,7; 2,0; 2,3) = Good; “Befriedigend” (2,7; 3,0; 3,3) = Satisfactory; “Ausreichend” (3,7; 4,0) = Pass; “Nicht ausreichend” (5,0) = Fail
Statistical distribution of grades: **grading table**

4.5 Overall classification of the qualification (in original language) **0,0**
The final grade is based on the grades awarded during the study programme and that of the final thesis (with oral component). Please refer to the Certificate (Bachelorzeugnis).
When there are no marks given, not enough results are available yet to determine ECTS-grades.

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study
The degree entitles its holder to apply for admission to master programmes.

5.2 Access to a regulated profession (if applicable)
The degree entitles its holder to the legally protected professional title "Ingenieur" and to exercise professional work in in the field(s) of engineering for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information
Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: ...

6.2 Further information sources
www.hawk.de

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

Document on the award of the academic degree (Bachelorurkunde)	**00.00.0000**
Certificate (Bachelorzeugnis)	**00.00.0000**
Transcript of Records	
Certification Date:	**00.00.0000**

(Official Stamp / Seal)

Chairwoman/Chairman Examination Committee

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

8. INFORMATION ON THE GERMAN HIGHER EDUCATION SYSTEM[i]

8.1 Types of Institutions and Institutional Status

Higher education (HE) studies in Germany are offered at three types of Higher Education Institutions (HEI).[ii]

- *Universitäten* (Universities) including various specialised institutions, offer the whole range of academic disciplines. In the German tradition, universities focus in particular on basic research so that advanced stages of study have mainly theoretical orientation and research-oriented components.
- *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (Universities of Applied Sciences, UAS) focus their study programmes on engineering and other technical disciplines, business-related studies, social work, and design areas. The common mission of applied research and development implies an application-oriented focus of studies, which includes integrated and supervised work assignments in industry, enterprises or other relevant institutions.
- *Kunst- und Musikhochschulen* (Universities of Art/Music) offer studies for artistic careers in fine arts, performing arts and music; in such fields as directing, production, writing in theatre, film, and other media; and in a variety of design areas, architecture, media and communication.

Higher Education Institutions are either state or state-recognised institutions. In their operations, including the organisation of studies and the designation and award of degrees, they are subject to higher education legislation.

8.2 Types of Programmes and Degrees Awarded

Studies in all three types of institutions have traditionally been offered in integrated "long" (one-tier) programmes leading to *Diplom-* or *Magister Artium* degrees or completed by a *Staatsprüfung* (State Examination).

Within the framework of the Bologna-Process one-tier study programmes are successively being replaced by a two-tier study system. Since 1998, two-tier degrees (Bachelor's and Master's) have been introduced in almost all study programmes. This change is designed to enlarge variety and flexibility for students in planning and pursuing educational objectives; it also enhances international compatibility of studies.

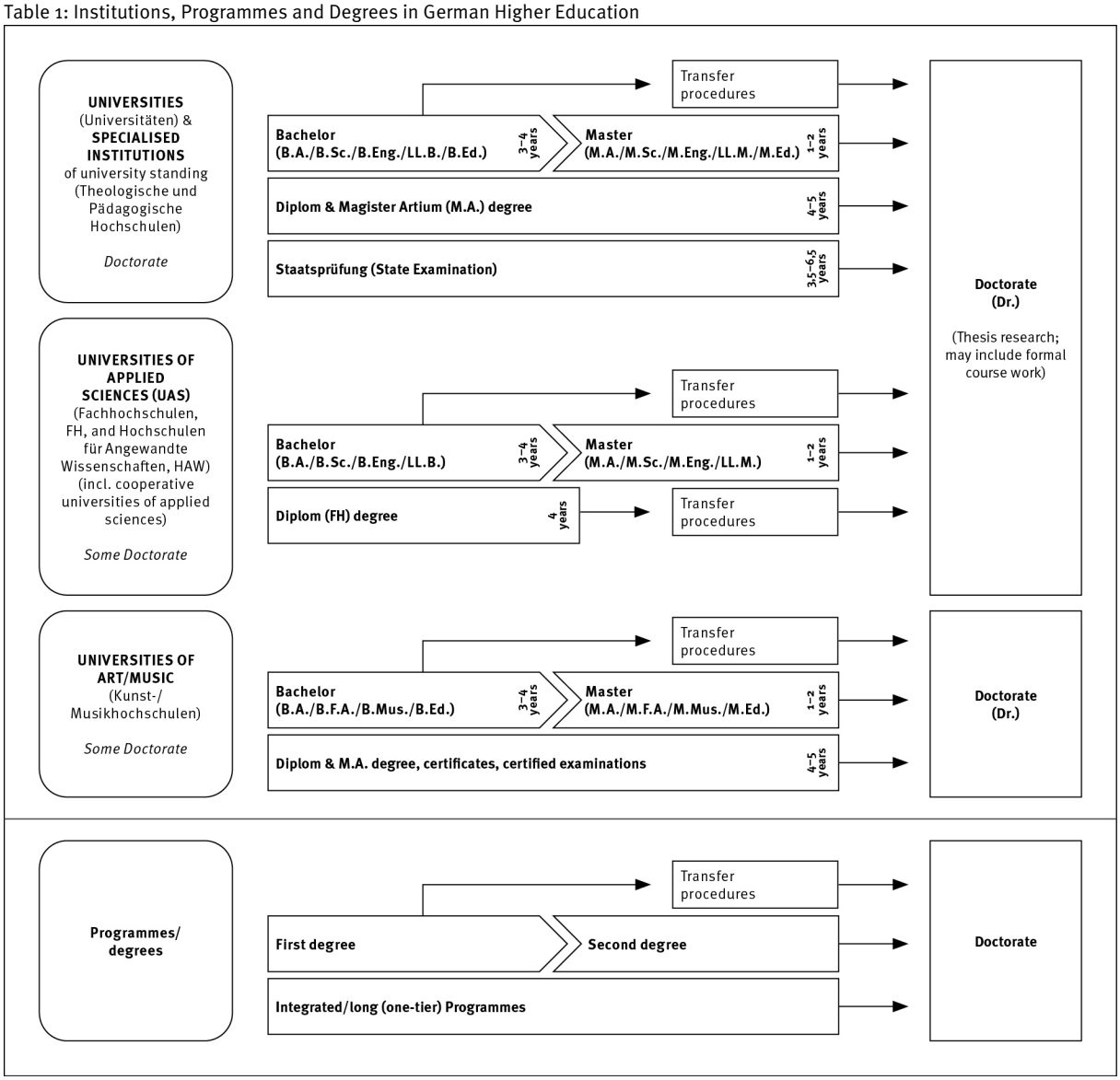
The German Qualifications Framework for Higher Education Qualifications (HQR)[iii] describes the qualification levels as well as the resulting qualifications and competences of the graduates. The three levels of the HQR correspond to the levels 6, 7 and 8 of the German Qualifications Framework for Lifelong Learning[iv] and the European Qualifications Framework for Lifelong Learning[v].

For details cf. Sec. 8.4.1, 8.4.2, and 8.4.3 respectively. Table 1 provides a synoptic summary.

8.3 Approval/Accreditation of Programmes and Degrees

To ensure quality and comparability of qualifications, the organisation of studies and general degree requirements have to conform to principles and regulations established by the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany (KMK).[vi] In 1999, a system of accreditation for Bachelor's and Master's programmes has become operational. All new programmes have to be accredited under this scheme; after a successful accreditation they receive the seal of the Accreditation Council.[vii]

Table 1: Institutions, Programmes and Degrees in German Higher Education



8.4 Organisation and Structure of Studies

The following programmes apply to all three types of institutions. Bachelor's and Master's study programmes may be studied consecutively, at various higher education institutions, at different types of higher education institutions and with phases of professional work between the first and the second qualification. The organisation of the study programmes makes use of modular components and of the European Credit Transfer and Accumulation System (ECTS) with 30 credits corresponding to one semester.

8.4.1 Bachelor

Bachelor's degree programmes lay the academic foundations, provide methodological competences and include skills related to the professional field. The Bachelor's degree is awarded after 3 to 4 years. The Bachelor's degree programme includes a thesis requirement. Study programmes leading to the Bachelor's degree must be accredited according to the Interstate study accreditation treaty.[viii]

First degree programmes (Bachelor) lead to Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Bachelor of Engineering (B.Eng.), Bachelor of Laws (LL.B.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.Mus.) or Bachelor of Education (B.Ed.). The Bachelor's degree corresponds to level 6 of the German Qualifications Framework/ European Qualifications Framework.

8.4.2 Master

The Master's degree is the second degree after another 1 to 2 years. Master's programmes may be differentiated by the profile types "practice-oriented" and "research-oriented". Higher Education Institutions define the profile. The Master's degree programme includes a thesis requirement. Study programmes leading to the Master's degree must be accredited according to the Interstate study accreditation treaty.[ix]

Second degree programmes (Master) lead to Master of Arts (M.A.), Master of Science (M.Sc.), Master of Engineering (M.Eng.), Master of Laws (L.L.M.), Master of Fine Arts (M.F.A.), Master of Music (M.Mus.) or Master of Education (M.Ed.). Master's programmes which are designed for continuing education may carry other designations (e.g. MBA).

The Master degree corresponds to level 7 of the German Qualifications Framework/ European Qualifications Framework.

8.4.3 Integrated "Long" Programmes (One-Tier): Diplom degrees, Magister Artium, Staatsprüfung

An integrated study programme is either mono-disciplinary (*Diplom* degrees, most programmes completed by a *Staatsprüfung*) or comprises a combination of either two major or one major and two minor fields *(Magister Artium)*. The first stage (1.5 to 2 years) focuses on broad orientations and foundations of the field(s) of study. An Intermediate Examination (*Diplom-Vorprüfung* for *Diplom* degrees; *Zwischenprüfung* or credit requirements for the *Magister Artium*) is prerequisite to enter the second stage of advanced studies and specialisations. Degree requirements include submission of a thesis (up to 6 months duration) and comprehensive final written and oral examinations. Similar regulations apply to studies leading to a *Staatsprüfung*. The level of qualification is equivalent to the Master's level.

- Integrated studies at *Universitäten (U)* last 4 to 5 years (*Diplom* degree, *Magister Artium*) or 3.5 to 6.5 years *(Staatsprüfung)*. The *Diplom* degree is awarded in engineering disciplines, the natural sciences as well as economics and business. In the humanities, the corresponding degree is usually the *Magister Artium* (M.A.). In the social sciences, the practice varies as a matter of institutional traditions. Studies preparing for the legal, medical and pharmaceutical professions are completed by a *Staatsprüfung*. This applies also to studies preparing for teaching professions of some *Länder.*

The three qualifications (*Diplom, Magister Artium* and *Staatsprüfung*) are academically equivalent and correspond to level 7 of the German Qualifications Framework/European Qualifications Framework.

They qualify to apply for admission to doctoral studies. Further prerequisites for admission may be defined by the Higher Education Institution, cf. Sec. 8.5.

- Integrated studies at *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (Universities of Applied Sciences, UAS) last 4 years and lead to a *Diplom (FH)* degree which corresponds to level 6 of the German Qualifications Framework/European Qualifications Framework.

Qualified graduates of FH/HAW/UAS may apply for admission to doctoral studies at doctorate-granting institutions, cf. Sec. 8.5.

- Studies at *Kunst- and Musikhochschulen* (Universities of Art/Music, etc.) are more diverse in their organisation, depending on the field and individual objectives. In addition to *Diplom/Magister* degrees, the integrated study programme awards include certificates and certified examinations for specialised areas and professional purposes.

8.5 Doctorate

Universities as well as specialised institutions of university standing, some of the FH/HAW/UAS and some Universities of Art/Music are doctorate-granting institutions. Formal prerequisite for admission to doctoral work is a qualified Master's degree (UAS and U), a *Magister* degree*,* a *Diplom*, a *Staatsprüfung*, or a foreign equivalent. Comparable degrees from universities of art and music can in exceptional cases (study programmes such as music theory, musicology, pedagogy of arts and music, media studies) also formally qualify for doctoral work. Particularly qualified holders of a Bachelor's degree or a *Diplom (FH)* degree may also be admitted to doctoral studies without acquisition of a further degree by means of a procedure to determine their aptitude. The universities respectively the doctorate-granting institutions regulate entry to a doctorate as well as the structure of the procedure to determine aptitude. Admission further requires the acceptance of the dissertation research project by a professor as a supervisor.

The doctoral degree corresponds to level 8 of the German Qualifications Framework/ European Qualifications Framework.

8.6 Grading Scheme

The grading scheme in Germany usually comprises five levels (with numerical equivalents; intermediate grades may be given): "*Sehr Gut*" (1) = Very Good; "*Gut*" (2) = Good; "*Befriedigend*" (3) = Satisfactory; "*Ausreichend*" (4) = Sufficient; "*Nicht ausreichend*" (5) = Non-Sufficient/Fail. The minimum passing grade is "*Ausreichend*" (4). Verbal designations of grades may vary in some cases and for doctoral degrees.

In addition, grade distribution tables as described in the ECTS Users' Guide are used to indicate the relative distribution of grades within a reference group.

8.7 Access to Higher Education

The General Higher Education Entrance Qualification (*Allgemeine Hochschulreife, Abitur*) after 12 to 13 years of schooling allows for admission to all higher education programmes. Specialised variants (*Fachgebundende Hochschulreife*) allow for admission at *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (UAS), universities and equivalent higher education institutions, but only in particular disciplines. Access to study programmes at *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (UAS) is also possible with a *Fachhochschulreife*, which can usually be acquired after 12 years of schooling. Admission to study programmes at Universities of Art/Music and comparable study programmes at other higher education institutions as well as admission to study programmes in sports may be based on other or additional evidence demonstrating individual aptitude.

Applicants with a qualification in vocational education and training but without a school-based higher education entrance qualification are entitled to a general higher education entrance qualification and thus to access to all study programmes, provided they have obtained advanced further training certificates in particular state-regulated vocational fields (e.g. *Meister/Meisterin im Handwerk, Industriemeister/in, Fachwirt/in (IHK), Betriebswirt/in (IHK) und (HWK), staatlich geprüfte/r Techniker/in, staatlich geprüfte/r Betriebswirt/in, staatlich geprüfte/r Gestalter/in, staatlich geprüfte/r Erzieher/in).* Vocationally qualified applicants can obtain a *Fachgebundende Hochschulreife* after completing a state-regulated vocational education of at least two years' duration plus professional practice of normally at least three years' duration, after having successfully

passed an aptitude test at a higher education institution or other state institution; the aptitude test may be replaced by successfully completed trial studies of at least one year's duration.[x]

Higher Education Institutions may in certain cases apply additional admission procedures.

8.8 National Sources of Information

- *Kultusministerkonferenz (KMK)* [Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany]; Graurheindorfer Str. 157, D-53117 Bonn;
  Phone: +49[0]228/501-0, www.kmk.org; E-Mail: hochschulen@kmk.org
- Central Office for Foreign Education (ZAB) as German NARIC; www.kmk.org; E-Mail: zab@kmk.org
- German information office of the *Länder* in the EURYDICE Network, providing the national dossier on the education system; www.kmk.org; E-Mail: Eurydice@kmk.org
- *Hochschulrektorenkonferenz* (HRK) [German Rectors' Conference]; Leipziger Platz 11, D-10117 Berlin,
  Phone: +49 30 206292-0; www.hrk.de; E-Mail: post@hrk.de
- "Higher Education Compass" of the German Rectors' Conference features comprehensive information on institutions, programmes of study, etc. (www.higher-education-compass.de)

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[i] The information covers only aspects directly relevant to purposes of the Diploma Supplement.

[ii] *Berufsakademien* are not considered as Higher Education Institutions, they only exist in some of the *Länder.* They offer educational programmes in close cooperation with private companies. Students receive a formal degree and carry out an apprenticeship at the company. Some *Berufsakademien* offer Bachelor courses which are recognised as an academic degree if they are accredited by the Accreditation Council.

[iii] German Qualifications Framework for Higher Education Degrees. (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 16 February 2017).

[iv] German Qualifications Framework for Lifelong Learning (DQR). Joint resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany, the German Federal Ministry of Education and Research, the German Conference of Economics Ministers and the German Federal Ministry of Economics and Technology (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 15 November 2012). More information at www.dqr.de

[v] Recommendation of the European Parliament and the European Council on the establishment of a European Qualifications Framework for Lifelong Learning of 23 April 2008 (2008/C 111/01 – European Qualifications Framework for Lifelong Learning – EQF).

[vi] Specimen decree pursuant to Article 4, paragraphs 1 – 4 of the interstate study accreditation treaty (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 21 November 2024).

[vii] Interstate Treaty on the organisation of a joint accreditation system to ensure the quality of teaching and learning at German higher education institutions (Interstate study accreditation treaty) (Decision of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 8 December 2016), Enacted on 1 January 2018.

[viii] See note No. 7.

[ix] See note No. 7.

[x] Access to higher education for applicants with a vocational qualification, but without a school-based higher education entrance qualification (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 6 March 2009).