

---

# **Prüfungsordnung für die Bachelorstudiengänge Elektrotechnik/Informationstechnik, Physikalische Technologien, Präzisionsmaschinenbau und Medizingenieurwesen (Besonderer Teil)**

---

**Fakultät Naturwissenschaften und Technik**

Der Fakultätsrat der Fakultät Naturwissenschaften und Technik der HAWK Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzwinden/Göttingen hat am 29. Januar 2019 die nachfolgende Ordnung über den Besonderen Teil der Prüfungsordnung für die Bachelorstudiengänge Elektrotechnik/Informationstechnik, Physikalische Technologien, Präzisionsmaschinenbau und Medizingenieurwesen sowie für die Bachelorstudiengänge im Praxisverbund Elektrotechnik/Informationstechnik, Physikalische Technologien und Präzisionsmaschinenbau beschlossen. Die Ordnung wurde am 25. Februar 2019 vom Präsidium der Hochschule gemäß § 37 Absatz 1 Satz 3 Ziffer 5b) NHG genehmigt. Die hochschulöffentliche Bekanntmachung erfolgte am 12. März 2019.

## **Inhaltsübersicht**

§ 1 Bezeichnung und Abschlüsse der Studiengänge.....	2
§ 2 Dauer und Verlauf des Studiums .....	2
§ 3 Prüfungs- und Studienleistungen .....	2
§ 4 Muster der Zeugnisse .....	3
§ 5 Wahlmodulauswahl, Wahl eines Studienschwerpunktes.....	3
§ 6 Art und Umfang der Bachelorprüfung, Zulassungsvoraussetzungen .....	4
§ 7 Art und Dauer des Kolloquiums .....	4
§ 8 Gesamtergebnis der Bachelorprüfung.....	4
§ 9 Inkrafttreten.....	4
Anlage 1: Bachelorurkunde.....	5
Anlage 2: Zeugnis der Bachelorprüfung.....	6
Anlage 3: Studienprogramme.....	7
Anlage 4: Diploma Supplements .....	19

## **§ 1 Bezeichnung und Abschlüsse der Studiengänge**

Die Studiengänge schließen mit der Bachelorprüfung ab. Nach bestandener Bachelorprüfung verleiht die Hochschule den Hochschulgrad „Bachelor of Engineering“ (abgekürzt: „B.Eng.“) für die Studiengänge Elektrotechnik/Informationstechnik, Physikalische Technologien, Präzisionsmaschinenbau und Medizingenieurwesen sowie für die Studiengänge im Praxisverbund Elektrotechnik/Informationstechnik, Physikalische Technologien und Präzisionsmaschinenbau. Darüber stellt die Hochschule eine Urkunde nach Anlage 1 mit dem Datum des Zeugnisses nach Anlage 2 aus. Gleichzeitig mit dem Zeugnis wird der/dem Studierenden ein Diploma Supplement ausgehändigt.

## **§ 2 Dauer und Verlauf des Studiums**

- (1) Das Studium beginnt im Wintersemester. Der Studienablauf ist der Anlage 3 festgelegt.
- (2) Das Studium kann als sechssemestriges Vollzeitstudium oder als Teilzeitstudium durchgeführt werden. Im Rahmen des Teilzeitstudienmodells ist es möglich, entweder ein Studienjahr, zwei Studienjahre oder das vollständige Studium in Teilzeit zu absolvieren. Einzelheiten zum Teilzeitstudium regelt die hochschulweit gültige Ordnung zum Teilzeitstudium. Für den Studiengang dieser Prüfungsordnung wird eine Empfehlung zur Gestaltung des Teilzeitstudiums gegeben.
- (3) Das Studium kann als achtsemestriges Vollzeitstudium im Praxisverbund durchgeführt werden. Dabei wird der Studienablauf gemäß Anlage 3 entweder mit einer Ausbildung oder einer Teilzeitbeschäftigung in einem Unternehmen kombiniert.
- (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 Pflichtmodule am Gesamtumfang beträgt 150 Credits.

## **§ 3 Prüfungs- und Studienleistungen**

- (1) In der Anlage 3 sind die zu erbringenden Prüfungs- und Studienleistungen festgelegt.
- (2) Die Bearbeitungszeit einer Studienleistung legt die/der Prüfer/in fest, bei Nichtfestlegung gilt eine Bearbeitungsdauer von 13 Wochen.
- (3) Studienleistungen sind erbracht, wenn sie mit „bestanden“ bewertet worden sind; eine Benotung erfolgt nicht.
- (4) Die Prüfungsanforderungen ergeben sich aus den Ausbildungszielen und Inhalten der jeweiligen Modulbeschreibung (siehe Modulhandbücher).
- (5) Nicht benotete, jedoch mit Credits ausgewiesene extern erbrachte Studien- oder Prüfungsleistungen an anderen Hochschulen können nach Prüfung der Gleichwertigkeit mit der Durchschnittsnote des Moduls anerkannt werden, auf das die extern erbrachte Leistung übertragen werden soll.
- (6) Die Teilnehmerzahl für bestimmte Lehrveranstaltungen kann beschränkt werden, wenn dies im Hinblick auf einen geordneten Studienbetrieb erforderlich ist.
- (7) Bei der Teilnahme an Lehrveranstaltungen haben die Studierenden, für deren Semester die Lehrveranstaltungen vorgesehen sind, und die Wiederholer Vorrang.

#### **§ 4 Muster der Zeugnisse**

Muster der Zeugnisse über die Bachelorprüfung enthält Anlage 2.

#### **§ 5 Wahlmodulauswahl, Wahl eines Studienschwerpunktes**

- (1) Die Prüfungskommission legt die Auswahl der Wahlmodule fest. Die angebotenen Wahlmodule werden im Prüfungsamt per Aushang sowie elektronisch veröffentlicht. Dabei dürfen Module mit vergleichbaren Prüfungsinhalten nicht mehrfach belegt werden. Module, die an anderen Fakultäten oder Hochschulen erfolgreich absolviert wurden, können auf Antrag anerkannt werden.
- (2) Wahlmodule können durch maximal zwei Studienarbeiten im Umfang von jeweils drei Credits ersetzt werden.
- (3) Die Studierenden des Bachelorstudiengangs Präzisionsmaschinenbau haben gemäß Anlage 3 die Möglichkeit, wahlweise einen Studienschwerpunkt Produktion oder einen Studienschwerpunkt Konstruktion zu bilden. Dabei müssen die jeweiligen Wahlpflichtmodule gemäß Anlage 3 im vierten Semester belegt werden. Die Entscheidung hat die/der Studierende bis zum Ablauf der vierten Woche nach Beginn des vierten Semesters dem Prüfungsamt schriftlich mitzuteilen, damit diese Schwerpunktbildung anerkannt und in der Bachelorurkunde gemäß Anlage 2 ausgewiesen werden kann. Sollte kein Studienschwerpunkt gewählt werden, muss die/der Studierende vier der acht Wahlpflichtmodule belegen und es wird der allgemeine Studienabschluss des Studiengangs in der Bachelorurkunde gemäß Anlage 2 ausgewiesen.
- (4) Die Studierenden des Bachelorstudiengangs im Praxisverbund Präzisionsmaschinenbau haben gemäß Anlage 3 die Möglichkeit, wahlweise einen Studienschwerpunkt Produktion oder einen Studienschwerpunkt Konstruktion zu bilden. Dabei müssen die jeweiligen Wahlpflichtmodule gemäß Anlage 3 im sechsten Semester belegt werden. Die Entscheidung hat die/der Studierende bis zum Ablauf der vierten Woche nach Beginn des sechsten Semesters dem Prüfungsamt schriftlich mitzuteilen, damit diese Schwerpunktbildung anerkannt und in der Bachelorurkunde gemäß Anlage 2 ausgewiesen werden kann. Sollte kein Studienschwerpunkt gewählt werden, muss die/der Studierende vier der acht Wahlpflichtmodule belegen und es wird der allgemeine Studienabschluss des Studiengangs in der Bachelorurkunde gemäß Anlage 2 ausgewiesen.
- (5) Die Studierenden des Bachelorstudiengangs Elektrotechnik/Informationstechnik haben gemäß Anlage 3 die Möglichkeit, wahlweise einen Studienschwerpunkt Mess- und Automatisierungstechnik oder einen Studienschwerpunkt Ingenieurinformatik zu bilden. Dabei müssen die jeweiligen Wahlpflichtmodule gemäß Anlage 3 im vierten und fünften Semester belegt werden. Die Entscheidung hat die/der Studierende bis zum Ablauf der vierten Woche nach Beginn des vierten Semesters dem Prüfungsamt schriftlich mitzuteilen, damit diese Schwerpunktbildung anerkannt und in der Bachelorurkunde gemäß Anlage 2 ausgewiesen werden kann. Sollte kein Studienschwerpunkt gewählt werden, muss die/der Studierende zwei der vier Wahlpflichtmodule belegen und es wird der allgemeine Studienabschluss des Studiengangs in der Bachelorurkunde gemäß Anlage 2 ausgewiesen.
- (6) Die Studierenden des Bachelorstudiengangs im Praxisverbund Elektrotechnik/Informationstechnik haben gemäß Anlage 3 die Möglichkeit, wahlweise einen Studienschwerpunkt Mess- und Automatisierungstechnik oder einen Studienschwerpunkt Ingenieurinformatik zu bilden. Dabei müssen die jeweiligen Wahlpflichtmodule gemäß Anlage 3 im sechsten und siebten Semester belegt werden. Die Entscheidung hat die/der Studierende bis zum Ablauf der vierten Woche nach Beginn des vierten bzw. sechsten Semesters dem Prüfungsamt schriftlich mitzuteilen, damit diese Schwerpunktbildung anerkannt und in der Bachelorurkunde gemäß Anlage 2 ausgewiesen werden kann. Sollte kein Studienschwerpunkt gewählt werden, muss die/der Studierende zwei der vier Wahlpflichtmodule belegen und es wird der allgemeine Studienabschluss des Studiengangs in der Bachelorurkunde gemäß Anlage 2 ausgewiesen.

## **§ 6 Art und Umfang der Bachelorprüfung, Zulassungsvoraussetzungen**

- (1) Die Modulprüfungen sowie Art und Anzahl der ihnen zugeordneten Prüfungsleistungen, der Prüfungsvorleistungen und die Credits der einzelnen Module sind in der Anlage 3 festgelegt.
- (2) Das Zulassungsverfahren erfolgt getrennt für die Modulprüfungen und die Bachelorabschlussarbeit.
- (3) Die Zulassung zu den Prüfungsleistungen setzt neben den Voraussetzungen gemäß des Allgemeinen Teils der Prüfungsordnung § 7 Absatz 2 die erbrachten Prüfungsvorleistungen voraus.
- (4) Zu den Modulprüfungen des dritten und vierten Semesters wird zugelassen, wer in den Modulprüfungen des ersten und zweiten Semesters (Anlage 3) mindestens 40 Credits erreicht hat. Zu den Modulprüfungen ab dem fünften Semester wird zugelassen, wer alle Modulprüfungen des ersten und zweiten Semesters bestanden hat.
- (5) Die Zulassung zur Bachelorabschlussarbeit setzt voraus, dass mindestens 150 Credits erreicht und alle Studienleistungen erbracht sind. Ist diese Bedingung nicht erfüllt, kann die Prüfungskommission im Einzelfall auf begründeten Antrag eine mit Auflagen verbundene Zulassung zur Bachelorabschlussarbeit aussprechen.  
Dem Antrag auf Zulassung zur Bachelorabschlussarbeit ist ein Vorschlag für den Themenbereich, dem das Thema der Bachelorabschlussarbeit entnommen werden soll, beizufügen. Die Zeit von der Ausgabe des Themas bis zur Ablieferung der Arbeit beträgt neun Wochen.

## **§ 7 Art und Dauer des Kolloquiums**

Das Kolloquium wird gemeinsam von den Prüfenden der Bachelorabschlussarbeit als Einzelprüfung oder Gruppenprüfung durchgeführt. Die Dauer des Kolloquiums beträgt in der Regel für jede/n zu Prüfende/n 40 bis 60 Minuten; 20 Minuten davon stehen für einen Vortrag der oder des zu Prüfenden zu den Ergebnissen der Bachelorabschlussarbeit zur Verfügung.

## **§ 8 Gesamtergebnis der Bachelorprüfung**

Benotete Module gehen mit dem Gewicht der Credits in die Gesamtnote ein.

## **§ 9 Inkrafttreten**

- (1) Diese Prüfungsordnung tritt am Tag nach ihrer hochschulöffentlichen Bekanntmachung in Kraft.
- (2) Sie gilt erstmalig für die Studierenden, die sich zum Wintersemester 2018/19 immatrikuliert haben.
- (3) Die nach der Prüfungsordnung 2011 begonnenen Prüfungsverfahren werden unter Wahrung des Vertrauensschutzes von vier Semestern in diese Ordnung überführt.

## Anlage 1: Bachelorurkunde

# BACHELORURKUNDE

---

Die HAWK  
Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik

verleiht mit dieser Urkunde

Frau/ Herrn           **«Vorname» «Nachname»**  
geboren am           «Datum» in «Ort»

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

**«Studiengang»**

bestanden hat.

---

Göttingen, den           «Datum»

---

«Dekan/in»  
Dekan/in

---

«Studiendekan/in»  
Studiendekan/in

## Anlage 2: Zeugnis über die Bachelorprüfung

# BACHELORZEUGNIS

---

**HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminde/Göttingen  
Fakultät Naturwissenschaften und Technik**

Frau/Herr  
geboren am

**«Vorname» «Nachname»**  
«GebDatum» in «GebOrt»

hat die Bachelorprüfung im Studiengang

**«Studiengang»**

bestanden.

### Thema der Bachelorabschlussarbeit:

«Arb1Thema»

	<b>Credits</b>	<b>Einzelnote</b>
Bachelorabschlussarbeit mit Kolloquium	«Credits»	«Note»
Pflichtmodule	«Credits»	«Note»
Wahlpflichtmodule	«Credits»	«Note»
Wahlmodule	«Credits»	«Note»
<b>Gesamtnote</b>	<b>«Credits»</b>	<b>«GesNote»</b>

---

Göttingen, den

«PruefDatum»

---

«Studiendekan/in»  
Studiendekan/in

Notenstufen: 1,0 bis 1,5 = Sehr Gut; 1,6 bis 2,5 = Gut; 2,6 bis 3,5 = Befriedigend; 3,6 bis 4,0 = Ausreichend

## Anlage 3: Studienprogramme

### (1) Bachelorstudiengang Elektrotechnik/Informationstechnik

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester					
		PL	SL	VL	1	2	3	4	5	6
Ba 1 – 011	Mathematik 1	K2			6					
Ba 1 – 031	Physik 1	K2	LS		6					
Ba 1 – 021	Informatik 1	K2	LS		6					
Ba 1 – 051	Elektrotechnik 1	K2	LS		6					
Ba 1 – 041	Technische Mechanik 1 - Statik	K2			6					
Ba 2 – 011	Mathematik 2	K2				6				
Ba 2 – 031	Physik 2	K2	LS			6				
Ba 2 – 021	Informatik 2	K2	LS			6				
Ba 2 – 051	Elektronik 1	K2	LS			6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS		6				
Ba 3 – 011	Mathematik 3	K2					6			
Ba 3 – 023	Kommunikationstechnik	K2					6			
Ba 3 – 033	Elektrotechnik 2	K2	LS				6			
Ba 3 – 043	Mikroprozessortechnik	K2	ED				6			
Ba 3 – 052	Elektronik 2	K2					6			
Ba 4 – 012	Regelungstechnik	K2	LS					6		
Ba 4 – 024	Algorithmen und Datenstrukturen	K2						6		
Ba 4 – 034	Digitale Signalverarbeitung	K2						6		
Ba 4 – 044	Sensortechnik und Steuerungstechnik	K2	LS					6		
Studienschwerpunkt Ingenieurinformatik										
Ba 4 – 054	Wahlpflichtmodul: Rechnernetze und Betriebssysteme	K2	LS					6		
Studienschwerpunkt Mess- und Automatisierungstechnik										
Ba 4 – 055	Wahlpflichtmodul: Antriebstechnik und Leistungselektronik	K2	LS					6		
Ba 5 – 022	Projektmanagement	K1							3	
Ba 5 – 021	Technisches Englisch		K1							3
	Individuelles Profilstudium (HAWK plus)									6
	Wahlmodule									12
Studienschwerpunkt Ingenieurinformatik										
Ba 5 – 051	Wahlpflichtmodul: Userinterface Programmierung	K2	LS						6	
Studienschwerpunkt Mess- und Automatisierungstechnik										
Ba 5 – 052	Wahlpflichtmodul: Elektrische Messtechnik	K2	LS						6	
Ba 6 – 011	Bachelorpraxisprojekt		E, ED, P, PA, S							15
Ba 6 – 021	Bachelorabschlussarbeit	A								12

Ba 6 – 021	Kolloquium	Kq										3
	Summe					30	30	30	30	30	30	30

Erläuterungen/Abkürzungen siehe Seite 18.



## (2) Bachelorstudiengang im Praxisverbund Elektrotechnik/Informationstechnik

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester								
		PL	SL	VL	1	2	3	4	5	6	7	8	
Ba 1 – 011	Mathematik 1	K2			6								
Ba 1 – 031	Physik 1	K2	LS		6								
Ba 1 – 08	Informatik 1	K2	LS		6								
	Berufspraxisphase im 1. Semester												
Ba 2 – 011	Mathematik 2	K2			6								
Ba 2 – 031	Physik 2	K2	LS		6								
Ba 2 – 08	Informatik 2	K2	LS		6								
	Berufspraxisphase im 2. Semester												
Ba 3 – 011	Mathematik 3	K2				6							
Ba 1 – 051	Elektrotechnik 1	K2	LS			6							
Ba 1 – 041	Technische Mechanik 1 – Statik	K2				6							
	Berufspraxisphase im 3. Semester												
Ba 4 – 012	Regelungstechnik	K2	LS				6						
Ba 2 – 051	Elektronik 1	K2	LS				6						
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS			6						
	Berufspraxisphase im 4. Semester												
Ba 3 – 023	Kommunikationstechnik	K2						6					
Ba 3 – 033	Elektrotechnik 2	K2	LS					6					
Ba 3 – 043	Mikroprozessortechnik	K2	ED					6					
Ba 3 – 052	Elektronik 2	K2						6					
	Berufspraxisphase im 5. Semester												
Ba 4 – 024	Algorithmen und Datenstrukturen	K2							6				
Ba 4 – 034	Digitale Signalverarbeitung	K2								6			
Ba 4 – 044	Sensortechnik und Steuerungstechnik	K2	LS								6		
	Studienschwerpunkt Ingenieurinformatik												
Ba 4 – 054	Wahlpflichtmodul: Rechnernetze und Betriebssysteme	K2	LS								6		
	Studienschwerpunkt Mess- und Automatisierungstechnik												
Ba 4 – 055	Wahlpflichtmodul: Antriebstechnik und Leistungselektronik	K2	LS								6		
	Berufspraxisphase im 6. Semester												
Ba 5 – 022	Projektmanagement	K1										3	
Ba 5 – 021	Technisches Englisch		K1										3
	Individuelles Profilstudium (HAWK plus)												6
	Wahlmodule												12
	Studienschwerpunkt Ingenieurinformatik												
Ba 5 – 051	Wahlpflichtmodul: Userinterface Programmierung	K2	LS									6	

Studienschwerpunkt Mess- und Automatisierungstechnik													
Ba 5 – 052	Wahlpflichtmodul: Elektrische Messtechnik	K2	LS										6
Ba 6 – 011	Bachelorpraxisprojekt		ED, E, P, PA, S										15
Ba 6 – 021	Bachelorabschlussarbeit	A											12
Ba 6 – 021	Kolloquium	Kq											3
	<b>Summe</b>					<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>24</b>	<b>24</b>	<b>30</b>	<b>30</b>

Erläuterungen/Abkürzungen siehe Seite 18.

(3) Bachelorstudiengang Mediziningenieurwesen

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester					
		PL	SL	VL	1	2	3	4	5	6
Ba 1 – 011	Mathematik 1	K2			6					
Ba 1 – 031	Physik 1	K2	LS		6					
Ba 1 – 021	Informatik 1	K2	LS		6					
Ba 1 – 071	Medizintechnik 1	K2			6					
Ba 1 – 061	Medizin 1	K2			6					
Ba 2 – 011	Mathematik 2	K2				6				
Ba 2 – 031	Physik 2	K2	LS			6				
Ba 2 – 021	Informatik 2	K2	LS			6				
Ba 2 – 071	Medizintechnik 2	K2				6				
Ba 2 – 061	Medizin 2	K2				6				
Ba 3 – 011	Mathematik 3	K2					6			
Ba 1 – 051	Elektrotechnik 1	K2	LS				6			
Ba 1 – 041	Technische Mechanik 1 - Statik	K2					6			
Ba 3 – 071	Konstruktionslehre und CAD in der Medizintechnik	K2	LS				6			
Ba 3 – 061	Medizin 3	K2					6			
Ba 4 – 013	Interprofessionelle Kollaboration im Gesundheitswesen	S	R					6		
Ba 2 – 051	Elektronik 1	K2	LS					6		
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS				6		
Ba 4 – 071	Bildverarbeitung in der Medizin	K2	LS					6		
Ba 4 – 061	Medizininformatik	K2						6		
Ba 5 – 022	Projektmanagement	K1							3	
Ba 5 – 021	Technisches Englisch		K1							3
	Individuelles Profilstudium (HAWK plus)									6
	Wahlmodule									18
Ba 6 – 011	Bachelorpraxisprojekt		E, ED, P, PA, S							15
Ba 6 – 021	Bachelorabschlussarbeit	A								12
Ba 6 – 021	Kolloquium	Kq								3
	<b>Summe</b>				<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>

Erläuterungen/Abkürzungen siehe Seite 18.

(4) Bachelorstudiengang Physikalische Technologien

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester					
		PL	SL	VL	1	2	3	4	5	6
Ba 1 – 011	Mathematik 1	K2			6					
Ba 1 – 031	Physik 1	K2	LS		6					
Ba 1 – 021	Informatik 1	K2	LS		6					
Ba 1 – 051	Elektrotechnik 1	K2	LS		6					
Ba 1 – 041	Technische Mechanik 1 - Statik	K2			6					
Ba 2 – 011	Mathematik 2	K2				6				
Ba 2 – 031	Physik 2	K2	LS			6				
Ba 2 – 021	Informatik 2	K2	LS			6				
Ba 2 – 051	Elektronik 1	K2	LS			6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS		6				
Ba 3 – 011	Mathematik 3	K2					6			
Ba 3 – 021	Oberflächenphysik	K2					6			
Ba 3 – 031	Atom- und Kernphysik	K2	LS				6			
Ba 3 – 041	Technische Optik	K2	LS				6			
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2, EP					6			
Ba 4 – 011	Laserwerkstoffbearbeitung	K2						6		
Ba 4 – 031	Spektroskopie	K2	LS					6		
Ba 4 – 034	Digitale Signalverarbeitung	K2						6		
Ba 4 – 021	Kohärente Optik	K2						6		
Ba 4 – 051	Experimentalphysik	EA						6		
Ba 5 – 022	Projektmanagement	K1							3	
Ba 5 – 021	Technisches Englisch		K1						3	
	Individuelles Profilstudium (HAWK plus)								6	
	Wahlmodule								18	
Ba 6 – 011	Bachelorpraxisprojekt		E, ED, P, PA, S							15
Ba 6 – 021	Bachelorabschlussarbeit	A								12
Ba 6 – 021	Kolloquium	Kq								3
	<b>Summe</b>				<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>

Erläuterungen/Abkürzungen siehe Seite 18.

(5) Bachelorstudiengang im Praxisverbund Physikalische Technologien

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester								
		PL	SL	VL	1	2	3	4	5	6	7	8	
Ba 1 – 011	Mathematik 1	K2			6								
Ba 1 – 031	Physik 1	K2	LS		6								
Ba 1 – 021	Informatik 1	K2	LS		6								
	Berufspraxisphase im 1. Semester												
Ba 2 – 011	Mathematik 2	K2			6								
Ba 2 – 031	Physik 2	K2	LS		6								
Ba 2 – 021	Informatik 2	K2	LS		6								
	Berufspraxisphase im 2. Semester												
Ba 3 – 011	Mathematik 3	K2					6						
Ba 1 – 051	Elektrotechnik 1	K2	LS				6						
Ba 1 – 041	Technische Mechanik 1 – Statik	K2					6						
	Berufspraxisphase im 3. Semester												
Ba 4 – 011	Laserwerkstoffbearbeitung	K2						6					
Ba 2 – 051	Elektronik 1	K2	LS					6					
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS				6					
	Berufspraxisphase im 4. Semester												
Ba 3 – 021	Oberflächenphysik	K2							6				
Ba 3 – 031	Atom- und Kernphysik	K2	LS						6				
Ba 3 – 041	Technische Optik	K2	LS						6				
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2, EP							6				
	Berufspraxisphase im 5. Semester												
Ba 4 – 031	Spektroskopie	K2	LS							6			
Ba 4 – 034	Digitale Signalverarbeitung	K2								6			
Ba 4 – 021	Kohärente Optik	K2								6			
Ba 4 – 051	Experimentalphysik	EA								6			
	Berufspraxisphase im 6. Semester												
Ba 5 – 022	Projektmanagement	K1										3	
Ba 5 – 021	Technisches Englisch		K1										3
	Individuelles Profilstudium (HAWK plus)												6
	Wahlmodule												18
Ba 6 – 011	Bachelorpraxisprojekt		E, ED, P, PA, S										15
Ba 6 – 021	Bachelorabschlussarbeit	A											12
Ba 6 – 021	Kolloquium	Kq											3
	<b>Summe</b>				<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>24</b>	<b>24</b>	<b>30</b>	<b>30</b>	

Erläuterungen/Abkürzungen siehe Seite 18.

## (6) Bachelorstudiengang Präzisionsmaschinenbau

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester					
		PL	SL	VL	1	2	3	4	5	6
Ba 1 – 011	Mathematik 1	K2			6					
Ba 1 – 031	Physik 1	K2	LS		6					
Ba 1 – 021	Informatik 1	K2	LS		6					
Ba 1 – 051	Elektrotechnik 1	K2	LS		6					
Ba 1 – 041	Technische Mechanik - Statik	K2			6					
Ba 2 – 011	Mathematik 2	K2				6				
Ba 2 – 031	Physik 2	K2	LS			6				
Ba 2 – 021	Informatik 2	K2	LS			6				
Ba 2 – 051	Elektronik 1	K2	LS			6				
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS		6				
Ba 3 – 011	Mathematik 3	K2					6			
Ba 3 – 022	Technische Mechanik 2 - Festigkeitslehre	K2					6			
Ba 3 – 032	Konstruktion 1	K2	LS				6			
Ba 3 – 042	Fertigung Metalle	K2					6			
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2, EP					6			
Ba 4 – 012	Regelungstechnik	K2	LS					6		
Studienschwerpunkt Produktion										
Ba 4 – 023	Wahlpflichtmodul: Kunststofftechnologie	K2		LS				6		
Ba 4 – 033	Wahlpflichtmodul: Fertigungsmesstechnik	K2	LS					6		
Ba 4 – 043	Wahlpflichtmodul: Qualitätsmanagement und Fertigungsorganisation	K2						6		
Ba 4 – 053	Wahlpflichtmodul: Optikfertigung	BÜ						6		
Studienschwerpunkt Konstruktion										
Ba 4 – 022	Wahlpflichtmodul: Technische Mechanik 3 – Dynamik	K2, EP						6		
Ba 4 – 032	Wahlpflichtmodul: Strömungslehre und Thermodynamik 2	K2, EP						6		
Ba 4 – 042	Wahlpflichtmodul: Maschinenelemente	K2						6		
Ba 4 – 052	Wahlpflichtmodul: Konstruktion 2	K1	LS					6		
Ba 5 – 022	Projektmanagement	K1							3	
Ba 5 – 021	Technisches Englisch		K1						3	
	Individuelles Profilstudium (HAWK plus)								6	
	Wahlmodule								18	

Ba 6 – 011	Bachelorpraxisprojekt		E, ED, P, PA, S								15
Ba 6 – 021	Bachelorabschlussarbeit	A									12
Ba 6 – 021	Kolloquium	Kq									3
	<b>Summe</b>					30	30	30	30	30	30

Erläuterungen/Abkürzungen siehe Seite 18.

## (7) Bachelorstudiengang im Praxisverbund Präzisionsmaschinenbau

Modul-Nr.	Modulname	Prüfungsart			Credits/Semester								
		PL	SL	VL	1	2	3	4	5	6	7	8	
Ba 1 – 011	Mathematik 1	K2			6								
Ba 1 – 031	Physik 1	K2	LS		6								
Ba 1 – 021	Informatik 1	K2	LS		6								
	Berufspraxisphase im 1. Semester												
Ba 2 – 011	Mathematik 2	K2			6								
Ba 2 – 031	Physik 2	K2	LS		6								
Ba 2 – 021	Informatik 2	K2	LS		6								
	Berufspraxisphase im 2. Semester												
Ba 3 – 011	Mathematik 3	K2					6						
Ba 1 – 051	Elektrotechnik 1	K2	LS				6						
Ba 1 – 041	Technische Mechanik 1 – Statik	K2					6						
	Berufspraxisphase im 3. Semester												
Ba 4 – 012	Regelungstechnik	K2	LS					6					
Ba 2 – 051	Elektronik 1	K2	LS					6					
Ba 2 – 041	Werkstoffkunde und Chemie	K2		LS				6					
	Berufspraxisphase im 4. Semester												
Ba 3 – 022	Technische Mechanik 2 – Festigkeitslehre	K2							6				
Ba 3 – 032	Konstruktion 1	K2	LS						6				
Ba 3 – 042	Fertigung Metalle	K2							6				
Ba 3 – 051	Strömungslehre und Thermodynamik 1	K2, EP							6				
	Berufspraxisphase im 5. Semester												
Studienschwerpunkt Produktion													
Ba 4 – 023	Wahlpflichtmodul: Kunststofftechnologie	K2		LS							6		
Ba 4 – 033	Wahlpflichtmodul: Fertigungsmesstechnik	K2	LS								6		
Ba 4 – 043	Wahlpflichtmodul: Qualitätsmanagement und Fertigungsorganisation	K2									6		
Ba 4 – 053	Wahlpflichtmodul: Optikfertigung	BÜ									6		
	Berufspraxisphase im 6. Semester												
Studienschwerpunkt Konstruktion													
Ba 4 – 022	Wahlpflichtmodul: Technische Mechanik 3 – Dynamik	K2, EP									6		
Ba 4 – 032	Wahlpflichtmodul: Strömungslehre und Thermodynamik 2	K2, EP									6		
Ba 4 – 042	Wahlpflichtmodul:	K2									6		





(8) Erläuterungen/Abkürzungen

Abkürzung	Bezeichnung	Erläuterungen
Ba	Bachelor	
PL	Prüfungsleistung	
SL	Studienleistung	
VL	Vorleistung	
K	Klausur	Zahl = Bearbeitungszeit in Zeitstunden
BÜ	Berufspraktische Übungen	Zahl = Bearbeitungszeit in Zeitstunden
E	Entwurf	
EA	Experimentelle Arbeit	
ED	Erstellung und Dokumentation von Rechnerprogrammen	
EP	Elektronische Prüfung	
SE	Systementwurf	Zahl = Bearbeitungszeit in Zeitstunden
M	Mündliche Prüfung	
S	Studienarbeit	
A	Abschlussarbeit	
Kq	Kolloquium	
LS	Laborschein	
P	Präsentation	
PA	Projektarbeit	
R	Referat	

Die Modulprüfungen können von der Prüfungskommission durch andere Prüfungsarten ersetzt werden.

## Anlage 4: Diploma Supplements

### 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

#### 2. Qualification

- |     |  |  |
|-----|--|--|
| 2.1 | Name of Qualification (full – abbreviated, in original language) | Bachelor of Engineering – B.Eng.   |
| 2.2 | Main Field(s) of Study   | <b>Elektrotechnik/Informationstechnik</b>  |
| 2.3 | Institution Awarding the Qualification (in original language)    | HAWK Hochschule für angewandte Wissenschaft und Kunst<br>Hildesheim/Holzminen/Göttingen<br>Fakultät Naturwissenschaften und Technik<br>University of Applied Sciences and Arts / State Institution |
| 2.4 | Institution Administering Studies (in original language)         | [as above]   |
|     | Status (Type / Control)  | [as above]   |
| 2.5 | Language(s) of Instruction/Examination                           | German   |

#### 3. Level of the Qualification

- |     |                              |   |
|-----|------------------------------|---|
| 3.1 | Level of Qualification       | Bachelor programme, undergraduate, first degree   |
| 3.2 | Official Length of Programme | 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. Contents and Results gained**

##### **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 Requirements**

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 "Mess- und Automatisierungstechnik" which requires electrical drives, power electronics and electrical measurement technology 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**

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

##### **4.4 Grading Scheme**

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**

**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 Final Examination Certificate (Bachelorzeugnis).

#### **5. Function of the Qualification**

##### **5.1 Access to Further Study**

The degree entitles its holder to apply for admission to master programmes.

##### **5.2 Professional Status**

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**

See "Bachelorzeugnis" (Final Examination Certificate) for major field of study.

Depending on the choice of modules the addition "Mess- und Automatisierungstechnik"

covering the major field of study in measurement and automation technology or “Ingenieurinformatik” covering the major field of computer engineering can be obtained. Non-academic acquired competencies were credited in an amount of **00** credits in the following modules: ...

- 6.2 Additional Information Sources  
www.hawk.de

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from	<b>00.00.0000</b>
Bachelorzeugnis (Final Examination Certificate) dated from	<b>00.00.0000</b>
Transcript of Records dated from	<b>00.00.0000</b>

Certification Date: **Ort, 00.00.0000**

(Official Seal/Stamp)

---

Chairman Examination Committee

**8. Information on the German Higher Education System**

(siehe Seite 40)

# 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

## 2. Qualification

- 2.1 Name of Qualification (full – abbreviated, in original language)  
Bachelor of Engineering – B.Eng.
- 2.2 Main Field(s) of Study  
**Physikalische Technologien**
- 2.3 Institution Awarding the Qualification (in original language)  
HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik  
University of Applied Sciences and Arts / State Institution
- 2.4 Institution Administering Studies (in original language)  
[as above]  
Status (Type / Control)  
[as above]
- 2.5 Language(s) of Instruction/Examination  
German

## 3. Level of the Qualification

- 3.1 Level of Qualification  
Bachelor programme, undergraduate, first degree
- 3.2 Official Length of Programme  
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. Contents and Results gained**

##### **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 Requirements**

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**

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

##### **4.4 Grading Scheme**

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 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 Final Examination Certificate (Bachelorzeugnis).

#### **5. Function of the Qualification**

##### **5.1 Access to Further Study**

The degree entitles its holder to apply for admission to master programmes.

##### **5.2 Professional Status**

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

#### **6. Additional Information**

##### **6.1 Additional Information**

See "Bachelorzeugnis" (Final Examination Certificate) for major field of study.

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

##### **6.2 Additional Information Sources**

[www.hawk.de](http://www.hawk.de)

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from **00.00.0000**

Bachelorzeugnis (Final Examination Certificate) dated from **00.00.0000**

Transcript of Records dated from **00.00.0000**

Certification Date: **Ort, 00.00.0000**

(Official Seal / Stamp)

---

Chairman Examination Committee

**8. Information on the German Higher Education System**

(siehe Seite 40)



# 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

## 2. Qualification

- 2.1 Name of Qualification (full – abbreviated, in original language)  
Bachelor of Engineering – B.Eng.
- 2.2 Main Field(s) of Study  
**Präzisionsmaschinenbau**
- 2.3 Institution Awarding the Qualification (in original language)  
HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik  
University of Applied Sciences and Arts / State Institution
- 2.4 Institution Administering Studies (in original language)  
[as above]  
Status (Type / Control)  
[as above]
- 2.5 Language(s) of Instruction/Examination  
German

## 3. Level of the Qualification

- 3.1 Level of Qualification  
Bachelor programme, undergraduate, first degree
- 3.2 Official Length of Programme  
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. Contents and Results gained

- 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 Requirements

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

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

#### 4.4 Grading Scheme

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 **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 Final Examination Certificate (Bachelorzeugnis).

### 5. Function of the Qualification

#### 5.1 Access to Further Study

The degree entitles its holder to apply for admission to master programmes.

#### 5.2 Professional Status

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

### 6. Additional Information

#### 6.1 Additional Information

See "Bachelorzeugnis" (Final Examination Certificate) for major field of study.

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

#### 6.2 Additional Information Sources

[www.hawk.de](http://www.hawk.de)

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from **00.00.0000**

Bachelorzeugnis (Final Examination Certificate) dated from **00.00.0000**

Transcript of Records dated from **00.00.0000**

Certification Date: **Ort, 00.00.0000**

(Official Seal / Stamp)

---

Chairman Examination Committee

**8. Information on the German Higher Education System**

(siehe Seite 40)

# 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

## 2. Qualification

- 2.1 Name of Qualification (full – abbreviated, in original language)  
Bachelor of Engineering – B.Eng.  
Title Conferred
- 2.2 Main Field(s) of Study  
**Mediziningenieurwesen**
- 2.3 Institution Awarding the Qualification (in original language)  
HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik  
University of Applied Sciences and Arts / State Institution
- 2.4 Institution Administering Studies (in original language)  
[as above]  
Status (Type / Control)  
[as above]
- 2.5 Language(s) of Instruction/Examination  
German

## 3. Level of the Qualification

- 3.1 Level of Qualification  
Bachelor programme, undergraduate, first degree
- 3.2 Official Length of Programme  
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. Contents and Results gained**

##### 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 Requirements

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, General Chemistry and Mechanical Engineering. The students earn interdisciplinary and non-technical skills like Electrical and Electronically Engineering Science or Business Management. In the second part of the studies the program offers more advanced mandatory courses in Optical Engineering, Spectroscopy, Laser Technologies, Solid State Physics as well as Vacuum Technology and Cryogenics. The subjects Control Theory, Control Techniques and System Engineering cover the more theoretical background. The selection of elective technical courses allows the students to build up a personal emphasis on special physical 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

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

##### 4.4 Grading Scheme

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 **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 Final Examination Certificate (Bachelorzeugnis).

#### **5. Function of the Qualification**

##### 5.1 Access to Further Study

The degree entitles its holder to apply for admission to master programmes.

##### 5.2 Professional Status

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 Additional Information Sources

[www.hawk.de](http://www.hawk.de)

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from **00.00.0000**

Bachelorzeugnis (Final Examination Certificate) dated from **00.00.0000**

Transcript of Records dated from **00.00.0000**

Certification Date: **Ort, 00.00.0000**

(Official Seal / Stamp)

---

Chairman Examination Committee

**8. Information on the German Higher Education System**

(siehe Seite 40)

# 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

## 2. Qualification

- 2.1 Name of Qualification (full – abbreviated, in original language)  
Bachelor of Engineering – B.Eng.
- 2.2 Main Field(s) of Study  
**Elektrotechnik/Informationstechnik (im Praxisverbund)**
- 2.3 Institution Awarding the Qualification (in original language)  
HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik  
University of Applied Sciences and Arts / State Institution
- 2.4 Institution Administering Studies (in original language)  
[as above]  
Status (Type / Control)  
[as above]
- 2.5 Language(s) of Instruction/Examination  
German

## 3. Level of the Qualification

- 3.1 Level of Qualification  
Bachelor programme, undergraduate, first degree
- 3.2 Official Length of Programme  
Four years, 8 semesters, 180 ECTS
- 3.3 Access Requirement(s)  
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. Apprentice contract or part-time employment contract with corporate partner enterprise.

#### **4. Contents and Results gained**

##### **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 Requirements**

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 micro-processor 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 "Mess- und Automatisierungstechnik" which requires electrical drives, power electronics and electrical measurement technology 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**

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

##### **4.4 Grading Scheme**

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 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 Final Examination Certificate (Bachelorzeugnis).

#### **5. Function of the Qualification**

##### **5.1 Access to Further Study**

The degree entitles the holder to apply for admission to master programmes.

##### **5.2 Professional Status**

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**

See "Bachelorzeugnis" (Final Examination Certificate) for major field of study.

Depending on the choice of modules the addition "Mess- und Automatisierungstechnik"



covering the major field of study in measurement and automation technology or “Ingenieurinformatik” covering the major field of computer engineering can be obtained. Extended professional experiences equivalent to a workload of 1800h are acquired in close cooperation with a corporate partner.

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

- 6.2 Additional Information Sources  
www.hawk.de

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from	<b>00.00.0000</b>
Bachelorzeugnis (Final Examination Certificate) dated from	<b>00.00.0000</b>
Transcript of Records dated from	<b>00.00.0000</b>

Certification Date: **Ort, 00.00.0000**

(Official Seal / Stamp)

---

Chairman Examination Committee

- 8. Information on the German Higher Education System**  
(siehe Seite 40)

# 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

## 2. Qualification

- 2.1 Name of Qualification (full – abbreviated, in original language)  
Bachelor of Engineering – B.Eng.
- 2.2 Main Field(s) of Study  
**Präzisionsmaschinenbau (im Praxisverbund)**
- 2.3 Institution Awarding the Qualification (in original language)  
HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik  
University of Applied Sciences and Arts / State Institution
- 2.4 Institution Administering Studies (in original language)  
[as above]  
Status (Type / Control)  
[as above]
- 2.5 Language(s) of Instruction/Examination  
German

## 3. Level of the Qualification

- 3.1 Level of Qualification  
Bachelor programme, undergraduate, first degree
- 3.2 Official Length of Programme  
Four years, 8 semesters, 180 ECTS
- 3.3 Access Requirement(s)  
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. Apprentice contract or part-time employment contract with corporate partner enterprise.

## 4. Contents and Results gained

- 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 Requirements

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

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

#### 4.4 Grading Scheme

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 **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 Final Examination Certificate (Bachelorzeugnis).

### 5. Function of the Qualification

#### 5.1 Access to Further Study

The degree entitles its holder to apply for admission to master programmes.

#### 5.2 Professional Status

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

### 6. Additional Information

#### 6.1 Additional Information

See "Bachelorzeugnis" (Final Examination Certificate) for major field of study.

Extended professional experiences equivalent to a workload of 1800h are acquired in close cooperation with a corporate partner.

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

6.2 Additional Information Sources  
www.hawk.de

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from **00.00.0000**

Bachelorzeugnis (Final Examination Certificate) dated from **00.00.0000**

Transcript of Records dated from **00.00.0000**

Certification Date: **Ort, 00.00.0000**

(Official Seal / Stamp)

---

Chairman Examination Committee

**8. Information on the German Higher Education System**  
(siehe Seite 40)

# 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. Holder of the Qualification

- |     |                               |                                     |
|-----|-------------------------------|-------------------------------------|
| 1.1 | Family Name                   | <b>Nachname</b>                     |
| 1.2 | First Name                    | <b>Vorname</b>                      |
| 1.3 | Date, Place, Country of Birth | <b>oo.oo.oooo, Geburtsort, Land</b> |
| 1.4 | Student ID Number or Code     | <b>oooooo</b>                       |

## 2. Qualification

- 2.1 Name of Qualification (full – abbreviated, in original language)  
Bachelor of Engineering – B.Eng.
- 2.2 Main Field(s) of Study  
**Physikalische Technologien (im Praxisverbund)**
- 2.3 Institution Awarding the Qualification (in original language)  
HAWK Hochschule für angewandte Wissenschaft und Kunst  
Hildesheim/Holzminden/Göttingen  
Fakultät Naturwissenschaften und Technik  
University of Applied Sciences and Arts / State Institution
- 2.4 Institution Administering Studies (in original language)  
[as above]  
Status (Type / Control)  
[as above]
- 2.5 Language(s) of Instruction/Examination  
German

## 3. Level of the Qualification

- 3.1 Level of Qualification  
Bachelor programme, undergraduate, first degree
- 3.2 Official Length of Programme  
Four years, 8 semesters, 180 ECTS
- 3.3 Access Requirement(s)  
General Higher Education Entrance Qualification or Entrance Qualification to Universities of Applied Sciences, or foreign equivalent. Apprentice contract or part-time employment contract with corporate partner enterprise.

## 4. Contents and Results gained

- 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 Requirements

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

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

#### 4.4 Grading Scheme

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 **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 Final Examination Certificate (Bachelorzeugnis).

### 5. Function of the Qualification

#### 5.1 Access to Further Study

The degree entitles its holder to apply for admission to master programmes.

#### 5.2 Professional Status

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

### 6. Additional Information

#### 6.1 Additional Information

See "Bachelorzeugnis" (Final Examination Certificate) for major field of study.

Extended professional experiences equivalent to a workload of 1800h are acquired in close cooperation with a corporate partner.

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

#### 6.2 Additional Information Sources

[www.hawk.de](http://www.hawk.de)

**7. Certification**

This Diploma Supplement refers to the following original documents:

Bachelorurkunde (Degree Certificate) dated from **00.00.0000**

Bachelorzeugnis (Final Examination Certificate) dated from **00.00.0000**

Transcript of Records dated from **00.00.0000**

Certification Date: **Ort, 00.00.0000**

(Official Seal / Stamp)

---

Chairman Examination Committee

**8. Information on the German Higher Education System**

(siehe Seite 40)

## **8. Information on the German Higher Education System<sup>i</sup>**

### **8.1 Types of Institutions and Institutional Status**

Higher education (HE) studies in Germany are offered at three types of Higher Education Institutions (HEI).<sup>ii</sup>

- *Universitäten* (Universities) including various specialized 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* (Universities of Applied Sciences) concentrate their study programmes in 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-recognized institutions. In their operations, including the organization of studies and the designation and award of degrees, they are both 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 and Master) have been introduced in almost all study programmes. This change is designed to provide enlarged variety and flexibility to students in planning and pursuing educational objectives, they also enhance international compatibility of studies.

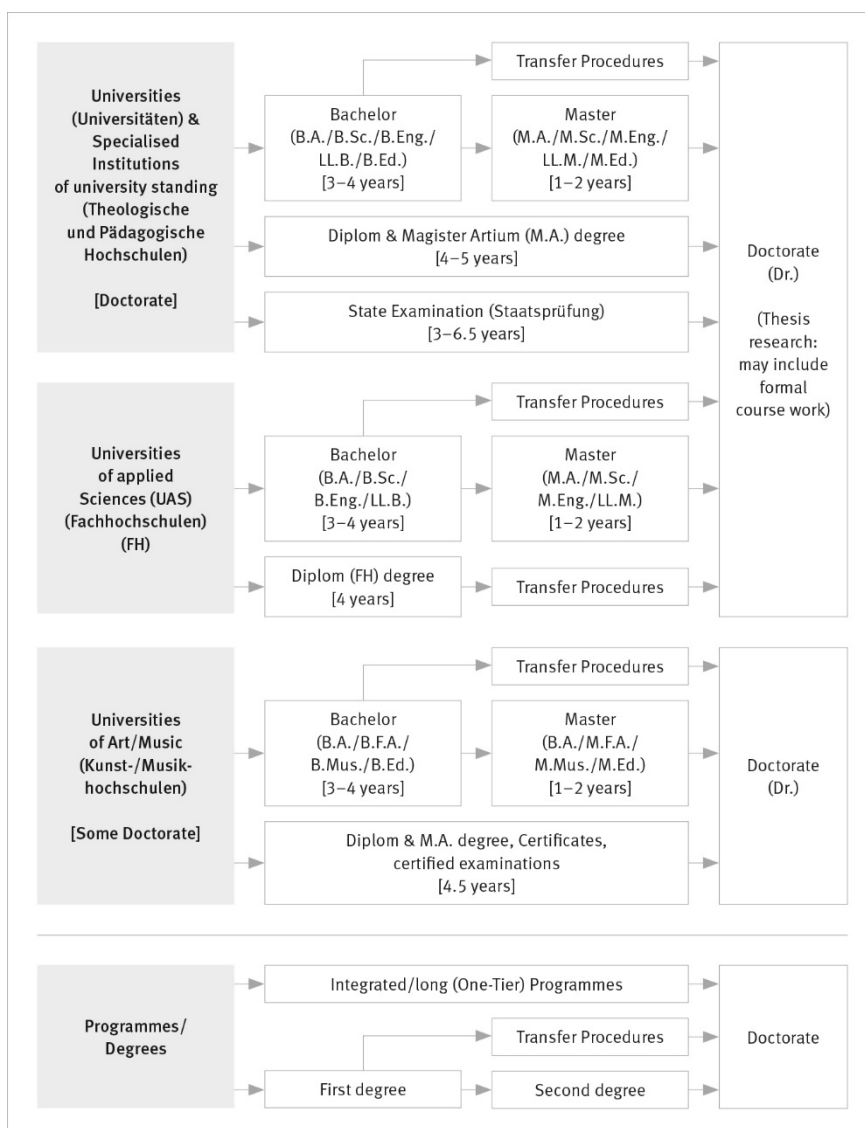
The German Qualifications Framework for Higher Education Degrees<sup>iii</sup>, the German Qualifications Framework for Lifelong Learning<sup>iv</sup> and the European Qualifications Framework for Lifelong Learning<sup>v</sup> describe the degrees of the German Higher Education System. They contain the classification of the qualification levels as well as the resulting qualifications and competencies of the graduates.

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 organization 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).<sup>vi</sup> In 1999, a system of accreditation for programmes of study has become operational under the control of an Accreditation Council at national level. All new programmes have to be accredited under this scheme; after a successful accreditation they receive the quality-label of the Accreditation Council.<sup>vii</sup>



#### 8.4 Organization and Structure of Studies

The following programmes apply to all three types of institutions. Bachelor's and Master's study courses 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 organization 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 degree study programmes lay the academic foundations, provide methodological skills and lead to qualifications related to the professional field. The Bachelor degree is awarded after 3 to 4 years. The Bachelor degree programme includes a thesis requirement. Study courses leading to the Bachelor degree must be accredited according to the Law establishing a Foundation for the Accreditation of Study Programmes in Germany.<sup>viii</sup> 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 degree corresponds to level 6 of the German Qualifications Framework/ European Qualifications Framework.

##### 8.4.2 Master

Master is the second degree after another 1 to 2 years. Master study programmes may be differentiated by the profile types "practice-oriented" and "research-oriented". Higher Education Institutions define the profile. The Master degree study programme includes a thesis requirement. Study programmes leading to the Master degree must be accredited according to the Law establishing a Foundation for the Accreditation of Study Programmes in Germany.<sup>ix</sup> 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 study 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 specializations. 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 level.

- Integrated studies at *Universitäten (U)* last 4 to 5 years (*Diplom* degree, *Magister Artium*) or 3 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)*/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.

While the *FH/UAS* are non-doctorate granting institutions, qualified graduates 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 organization, depending on the field and individual objectives. In addition to *Diplom/Magister* degrees, the integrated study programme awards include Certificates and certified examinations for specialized areas and professional purposes.

#### 8.5 Doctorate

Universities as well as specialized institutions of university standing and some Universities of Art/Music are doctorate-granting institutions. Formal prerequisite for admission to doctoral work is a qualified Master (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 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 educational studies. Specialized variants (*Fachgebundene Hochschulreife*) allow for admission at *Fachhochschulen (UAS)*, universities and equivalent higher education institutions, but only in particular disciplines. Access to study programmes at *Fachhochschulen (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 a study programme in sports may be based on other or additional evidence demonstrating individual aptitude.

Applicants with a vocational qualification 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 und HWK), staatlich geprüfte/r Betriebswirt/in, staatliche geprüfte/r Gestalter/in, staatlich geprüfte/r Erzieher/in*). Vocationally qualified applicants can obtain a *Fachgebundene 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.<sup>x</sup>

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; Fax: +49[0]228/501-777; Phone: +49[0]228/501-0
- 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]; Ahrstrasse 39, D-53175 Bonn; Fax: +49[0]228/887-110; Phone: +49[0]228/887-0; 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)

---

<sup>i</sup> The information covers only aspects directly relevant to purposes of the Diploma Supplement.

<sup>ii</sup> *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 recognized as an academic degree if they are accredited by a German accreditation agency.

<sup>iii</sup> 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).

<sup>iv</sup> 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

<sup>v</sup> 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).

<sup>vi</sup> Common structural guidelines of the *Länder* for the accreditation of Bachelor's and Master's study courses (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 10.10.2003, as amended on 04.02.2010).

<sup>vii</sup> "Law establishing a Foundation 'Foundation for the Accreditation of Study Programmes in Germany'", entered into force as from 26 February 2005, GV. NRW. 2005, No. 5, p. 45 in connection with the Declaration of the *Länder* to the Foundation "Foundation: Foundation for the Accreditation of Study Programmes in Germany" (Resolution

---

of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 16 December 2004).

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).