

What are the success rates of mechanical engineering (bachelor) students in Germany's HEIs?

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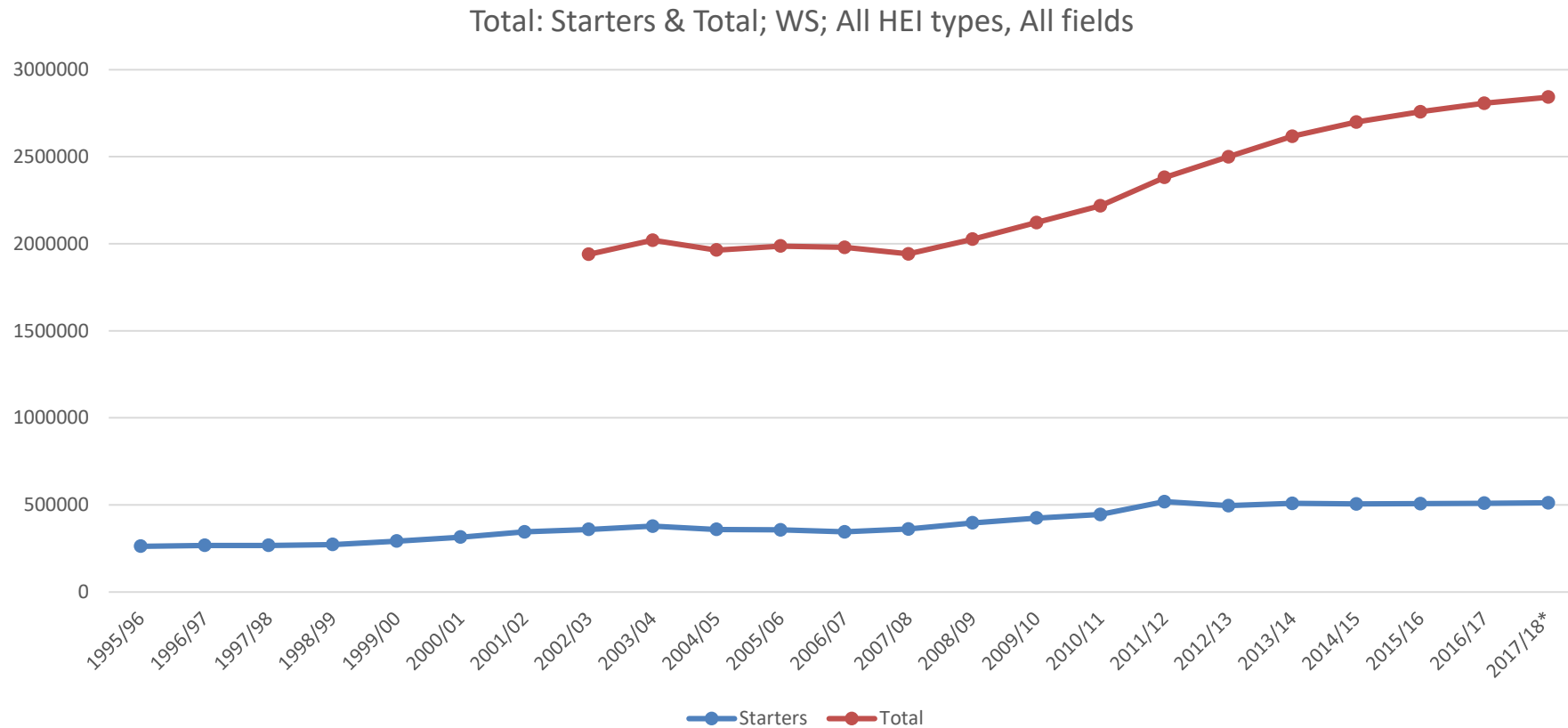
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A BMBF funded project for

Student Success - Introduction

- Firstly: why are we doing this, and who is it supposed to help
- Explanation about the German HEI system also in conjunction with the Bologna Process
- The registration in different types of HEIs – why we are using the HEIs that we have picked out and what the literature tells us about mechanical engineering, and the minefield surrounding (mechanical engineering) students in Germany
- The different interpretations of student success
- How we defined our measurement of success, and the cohort analysis
- Concluding with what we can read from the results, and where we are going with the results

Total: All registrations and starters



* source: <https://de.statista.com/statistik/daten/studie/221/umfrage/anzahl-der-studenten-an-deutschen-hochschulen/>

German Rectors' conference 2018

HEIs broken down by provider - there are at least:

- Public HEI 240
- not public but state recognised 156 (private 117, church 39)

Study course according to qualification - 19 135 –
of which there are:

- Diplom (Uni) 122
- Diplom (Uni of Appl. Science) 59
- Bachelor 8 738
- Master 8 769

Study programme according to HEI type:

- University 1 808
- University of App. Science 6 124

How we define success?

- Based on the following factors:
 - Student beginners/ starters (1st course and HEI semester)
 - Successful qualification in regular study time (RST)
 - Successful qualification in = RST + 1 year (not overlapping)
 - Successful qualification in = RST + 2 year (not overlapping)
 - After RST + 2 years and still registered

Our cohort

- Sample cohort beginning in: WiSe 08/09

WiSe 08/09	SoSe 09	WiSe 09/10	SoSe 10	WiSe 10/11	SoSe 11	WiSe 11/12	SoSe 12	WiSe 12/13	SoSe 13	WiSe 13/14
1. FS	2. FS	3. FS	4. FS	5. FS	6. FS	7. FS	8. FS	9. FS	10. FS	11. FS
Stud.-St.: Beginner		Stud.-St.: 3. Sem.								Stud.-St.: 11. Sem.
Examination Statistics: Qualification in RST						Examination Statistics: Qualification in RST + 1 year		Examinations statistics: Qualifications in RST + 2 years		

→ Are only permitted to look at the data cross-sectionally

- 3 different periods in time/ different data sets in the student statistics (w/o puffer)
- With buffer: allows students a buffer of 2 semesters difference between course semester to HEI semester-> (eg: 2nd course semester but 3rd HEI semester)
- 10 (+1) points in time/ data sets from the examination data sets

Mechanical Engineering in the following HEIs:

HEI	Cohort 2005/06	Cohort 2006/07	Cohort 2007/08	Cohort 2008/09	Cohort 2009/10
TU Braunschweig ¹				x o	x
U Hannover ¹				x	x
TU Darmstadt ¹	x	x	x	x o	x
KIT ¹				x o	x
U Stuttgart ¹				x o	x
TU München ¹				x o	x
RWTH Aachen ²			x o	x	
U Duisburg-Essen ²			x		
TU Berlin ³		x	x	x	x

1 – 6 semester study programme beginning winter semester

2 – 7 semester study programme beginning winter semester

3 – 6 semester study programme beginning summer and winter semester; results are available for summer cohorts 08 & 09

Calculations based on the above HEIs and study starters

Overview of HEIs and their success rates in different cohorts – without buffer

HEI	Category	Cohort 2005/06	Cohort 2006/07	Cohort 2007/08	Cohort 2008/09	Cohort 2009/10
TU Darmstadt	1 – Study starters (N)	327	325	350	549	561
	2 – Qualifications total (% von 1)	20,8	27,7	40,9	37,0	38,7
	3 – still registered (% von 1)	13,1	20,6	17,1	11,3	12,5
U Hannover	1 - Study starters (N)				217	407
	2 - Qualifications total (% von 1)				6,5	35,1
	3 - still registered (% von 1)				7,8	16,7
KIT	1 - Study starters (N)				571	744
	2 - Qualifications total (% von 1)				52,0	42,1
	3 - still registered (% von 1)				3,2	4,0
U Stuttgart	1 - Study starters (N)				779	737
	2 - Qualifications total (% von 1)				27,0	32,0
	3 - still registered (% von 1)				4,0	5,8
TU München	1 - Study starters (N)				666	643
	2 - Qualifications total (% von 1)				53,0	36,2
	3 - still registered (% von 1)				0,6	-
TU Braunschweig	1 - Study starters (N)				521	471
	2 - Qualifications total (% von 1)				51,8	54,6
	3 - still registered (% von 1)				8,3	11,5

Overview of student success in HEIs with 6 semester study programmes; calculations without allowing for buffer; qualifications in total = in RST, RST+1 und RST+2; still registered = registered in 11. course semester

Overview of HEIs and their success rates: Cohort 2008/09 – with buffer

Qualifications in HEI with 6 semester programmes, with a break of up to 2 semester breaks

HEI	Method of calculation	1 – Study starters	2 – qualification s total (% from 1)	...of which		
				3 – RST (% from 1)	4 - RST + 1 year (% from 1)	5 – RST + 2 year (% from 1)
TU Braunschweig	a – w/o buffer	521	51,8	15,9	24,0	11,9
	b – with buffer		57,6	17,5	26,5	13,6
TU Darmstadt	a - w/o buffer	549	37,0	15,5	15,3	6,2
	b – with buffer		59,4	18,2	29,5	11,7
KIT	a - w/o buffer	571	52,0	5,3	38,4	8,4
	b – with buffer		77,2	12,1	53,4	11,7
U Stuttgart	a - w/o buffer	779	27,0	3,6	16,8	6,5
	b – with buffer		61,4	24,1	27,5	9,8
TU München	a - w/o buffer	666	53,0	5,4	42,9	4,7
	b – with buffer		62,8	8,4	48,3	6,0

Overview of HEIs and their success rates: Cohort 2008/09

3rd semester “remainders” in HEI with 6-semester programmes break possible = up to 2 semester-break

HEI	Calculation method	1 – Study starters	2 – 3rd semester remainders (% von 1)
TU Braunschweig	a – w/o buffer	521	77,4
	b – with buffer		81,4
TU Darmstadt	a - w/o buffer	549	85,6
	b – with buffer		86,5
KIT	a - w/o buffer	571	87,4
	b – with buffer		89,5
U Stuttgart	a - w/o buffer	779	85,6
	b – with buffer		88,3
TU München	a - w/o buffer	666	79,0
	b – with buffer		80,5

Overview of HEIs and their success rates: Cohort 2008/09

HEI	Calculation	1 – Study starters	2 – Registered in 3rd semester	3 – 3rd semester remainers (% von 1)	4 – Students success rates Total qualifications based on student starters (% from 1)	5 – alternative student success rates qualifications in total based on registrations in 3 rd semester (% von 2)
TU Braunschweig	a – w/o buffer	521	403	77,4	51,8	67,0
	b – buffer		424	81,4	57,6	70,8
TU Darmstadt	a – w(o) buffer	549	470	85,6	37,0	43,2
	b – buffer		475	86,5	59,4	68,6
KIT	a – w/o buffer	571	499	87,4	52,0	59,5
	b – buffer		511	89,5	77,2	86,3
U Stuttgart	a – w/o buffer	779	667	85,6	27,0	31,5
	b – buffer		688	88,3	61,4	69,5
TU München	a – w/o buffer	666	526	79,0	53,0	67,1
	b – buffer		536	80,5	62,8	78,0

Third semester “remainers” and success rates based on first and third semester registrations of 6 semester bachelor programme in cohort 2008/09; qualifications in total= in RST, RST+1 and RST+2; possible buffer = up to 2 semester breaks

Student
Success –
more to the
story than
would appear

Relevance of mechanical engineering as a study programme

How realistic is the study period

The transition of those from diplom to bachelor

The transition of those from bachelor to diplom

The differences that exist between the HEIs

Thanks for your time 😊

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