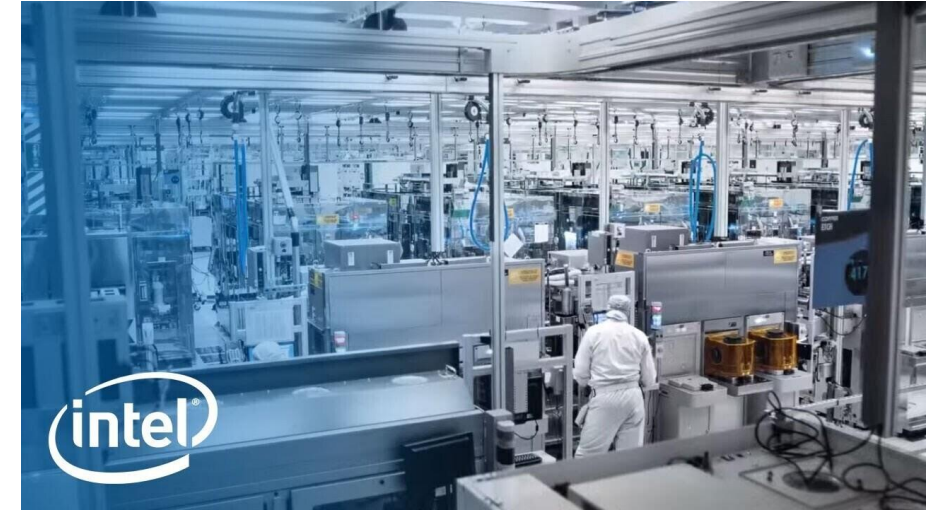


# M.Sc. Advanced Semiconductor Nanotechnologies



Cross-faculty, interdisciplinary study programme preparing students for High-Tech industries (Intel, Infineon, Bosch, GlobalFoundries, AMS Osram, TSMC, ASML, Coherent,...)

Degree: Master of Science (120 CP)

Begin/Duration: Winter term / 4 Semester

Capacity: max. 40 Students => Admission through selection procedure

Prerequisites: B. Sc. in Eng. Sciences/Natural Sciences or closely related (for instance: B.Sc. „Nanotechnology“)

Language: english (C1-Level)

Job perspectives: Semiconductor industry, industrial research and development, academia, IP, consulting ...

Contact person: Prof. André Strittmatter, [andre.strittmatter@ovgu.de](mailto:andre.strittmatter@ovgu.de)

## Mandatory courses

### Entrance harmonization

(Fundamental topics from electronics, chemistry, and quantum physics on B.Sc. level)

### Semiconductor physics

(Solid state physics, Semiconductor devices, Quantum structures)

### Semiconductor Engineering

(Integrated circuits, Semiconductor process technologies, Clean-room lab course, Advanced characterization methods)

### Informatics

(Machine learning)

### General education

(Academic skills development, Introduction to research)

### Master thesis

(6 months, 30 CPs, Faculties of Natural Sciences, Electrical Engineering, Process and Systems Engineering, Informatics)

## Specialization

### Basic semiconductor research

(Materials characterization, Method development)

### Applied semiconductor research

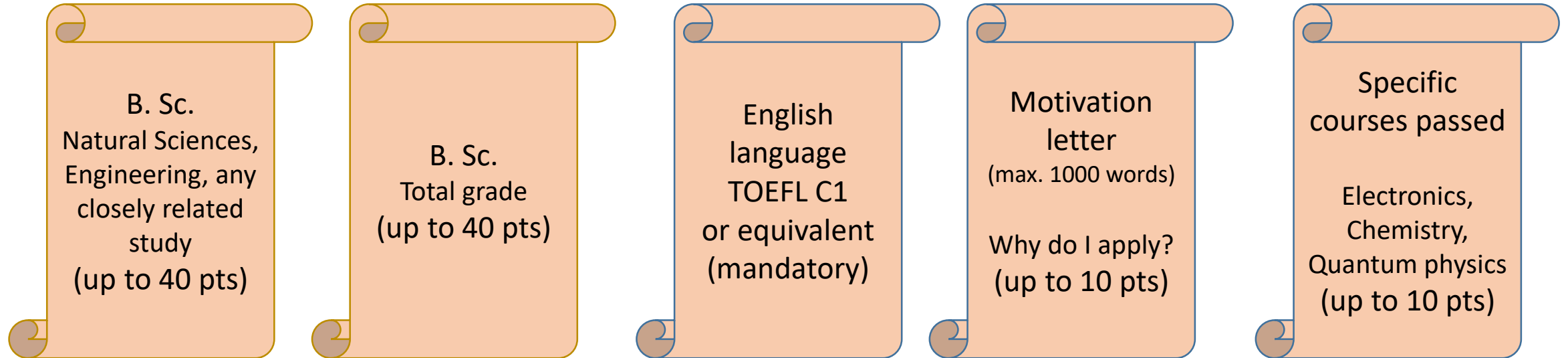
(Prototype development, Systems engineering)

### Artificial intelligence for process engineering

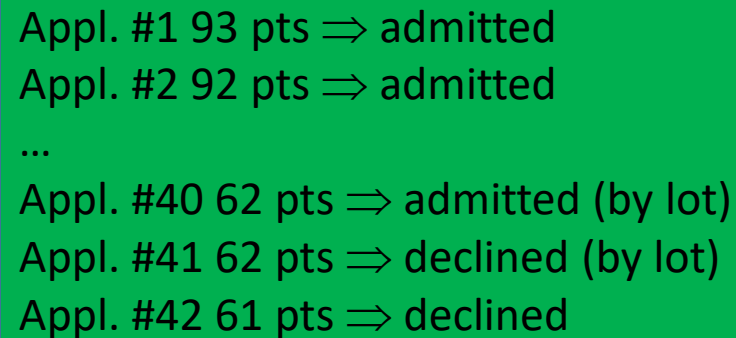
(Process analysis, Software development)

# Admission process

## Paperwork (EU applicants):



Ranking (max. 100 pts)



Appl. #1 93 pts ⇒ admitted  
Appl. #2 92 pts ⇒ admitted  
...  
Appl. #40 62 pts ⇒ admitted (by lot)  
Appl. #41 62 pts ⇒ declined (by lot)  
Appl. #42 61 pts ⇒ declined

		1.Semester		2. Semester		3. Semester		4. Semester		SWS	CP
		19	30	17	30	13	30	-	30	49	120
#	<b>Mandatory modules</b>	SWS	CP	SWS	CP	SWS	CP	SWS	CP		
1	<i>Entrance harmonization course 1/2</i>	3	5							3	5
2	<i>Entrance harmonization course 2/2</i>	3	5							3	5
3	<i>Solid state physics</i>	3	5							3	5
4	<i>Semiconductor quantum structures</i>			3	5					3	5
5	<i>Semiconductor devices I</i>			3	5					3	5
6	<i>Semiconductor devices II</i>					3	5			3	5
7	<i>Semiconductor process technologies</i>			2	5					2	5
8	<i>Advanced semiconductor characterization</i>			3	5					3	5
9	<i>Advanced electronic circuits</i>					3	5			3	5
10	<i>Machine learning</i>	4	5							4	5
11	<i>Cleanroom lab course</i>			3	5					3	5
12	<i>Academic skills development</i>					4	5			4	5
13	<i>Introduction to research</i>						10			0	10
14	<i>Master thesis</i>								30	0	30
	<b>Compulsory electable modules</b>									<b>6</b>	<b>10</b>
15	<i>Physical/Technical 1</i>	3	5							3	5
16	<i>Physical/Technical 2</i>			3	5					3	5
	<b>Non-technical electable modules</b>									<b>6</b>	<b>10</b>
17	<i>Non-technical module 1</i>	3	5							3	5
18	<i>Non-technical module 2</i>					3	5			3	5