

# Engineering Courses at the State Technical College for Food Engineering



## The History

The State Technical College for Food Engineering is situated in Kulmbach, a town in northern Bavaria with about 30,000 inhabitants.

Kulmbach is the ideal site for the Technical College due to the presence of the Max Rubner-Institut (MRI), the former Federal Institute for Meat Research and the fact that approximately 1/3 of its inhabitants are involved in the food industry in some way.

The college was established in 1974, in conjunction with the MRI, as the State Technical College for Meat Business Management; in 1977 the college was relocated to its present site next to the MRI. The change of name in 1980 to "State Technical College for Meat Engineering" was followed by the introduction of a second course in 1989 - that of Food Processing Engineering. Today the college is known as the State Technical College for Food Engineering and still offers courses in both Meat Engineering and Food Processing Engineering.

## Entrance Requirements

A Technical College aims at providing further training and retraining and promotes an all-round education. Therefore, its applicants are required to fulfill the following criteria:

- A completed secondary school education
- A completed training/apprenticeship:
  - Meat Engineering:** as butcher or meat product sales person
  - Food Processing Engineering:** a relevant career in a major area of the food industry, e.g. as baker, brewer, malster, distiller, specialist for fruit juice technology, confectionery technology, fish processing, butcher, home economist (specifically in dietetics and catering), chef, pastry chef, food product sales person, dairy specialist, miller wine producer (specifically wine-cellar management)

and in special cases at the discretion of the District of Oberfranken Government when proof of long term knowledge of the producing or processing of food products is submitted.

- A minimum of four years working in this career (including apprenticeship).

Due to the fact that there are only 30 places available per year and course at our college, the applicants are graded and selected following a point system with respect to previous training and practical experience.

## The Courses

The courses last two years each and the teaching time is allocated according to the Bavarian School Regulations. The timetables for the courses are as follows:

<b>Meat Engineering: compulsory subjects</b>	<b>h/week</b>	
	<b>1st year</b>	<b>2nd year</b>
German <sup>(1)</sup>	2	
English <sup>(1)</sup>	2	2
Mathematics I	5	
Mathematics II <sup>(1) (2)</sup>		2
Economics and social studies <sup>(1)</sup>	2	
Manufacturing engineering <sup>1) *</sup>	3	4
Food chemistry <sup>*</sup> )	5	
Knowledge of raw materials and organoleptic properties	3	
Technology of meat processing <sup>2) *</sup>	4	4
Microbiology and hygiene	2	
Data processing <sup>*</sup> )	3	
Business management	2	
Food law	2	
Industrial psychology		2
	<b>35</b>	<b>14</b>
<b>Optional subjects</b> (22 hours per week have to be chosen)		<b>+ 22</b>
Chemistry of meat		3
Microbiology of meat products		3
Labelling of meat products <sup>3)</sup>		2
Planning processes <sup>4)</sup>		3
Planning process flows		2
Practice of meat technology /project paper <sup>*</sup> )		4
Quality management and food safety <sup>5)</sup>		3
Business management and company organisation		3
Target cost accounting of meat products <sup>6)</sup>		2
Management of working data <sup>7)</sup>		3
Operating data management		2
Business informatics <sup>8)</sup>		2
<b><sup>n)</sup> final examination in 4 selectable subjects</b>	<b>36</b>	<b>36</b>

Food Processing Engineering: compulsory subjects	h/week	
	1st year	2nd year
German <sup>(1)</sup>	2	
English <sup>(1)</sup>	2	2
Mathematics I	5	
Mathematics II <sup>(1) (2)</sup>		2
Economics and social studies <sup>(1)</sup>	2	
Food chemistry	4	
Physics	3	
Chemical analysis of food *)	2	
Microbiology and hygiene <sup>1)</sup>	2	2
Industrial food technology <sup>2)</sup>	7	3
Manufacturing engineering *)	4	
Data processing *)	3	
Business management	2	
Food law <sup>3)</sup>		3
Industrial psychology		2
	<b>38</b>	<b>14</b>
<b>Optional subjects (22 hours per week have to be chosen)</b>		<b>+ 22</b>
Practice of food technology *)	-	3
Process technology and safety at work <sup>4)</sup>	-	4
Technology of filling and packing	-	2
Product planning and production control <sup>5)</sup>	-	4
Labour organisation	-	2
Quality management and food safety <sup>6)</sup>	-	4
Quality control	-	2
Cost accounting and financing *)	-	3
Production data acquisition	-	1
Biotechnology <sup>7)</sup>	-	2
Knowledge of nutrition <sup>8)</sup>	-	2
Environmental management	-	2
Project management and project paper	-	3
Technical English	-	2
<b>n) final examination in 4 selectable subjects</b>	<b>38</b>	<b>36</b>

For subjects denoted by an asteric, the theoretical part is completed as a practical workshop. The food engineering practices in the Food Processing Engineering course take place in the production areas of local food companies.

In addition to the stated subjects a further three-hour-course may be selected in the first year, that is called "career and work education". This serves as an exam preparation to gain a training certificate from the Chamber of Commerce (IHK).

Further more, a technical college certificate (equivalent to the GCE O'level) may be taken.

## **Employment Possibilities**

Due to the wide scope of the courses, Meat Engineers and Food Processing Engineers are able to find positions in all areas of the food industry.

Their positions mainly start as machine managers or departmental managers. For example, the specialized knowledge of production and processing methods will be of great importance when you start as an assistant production manager. This knowledge enables you to develop new products or product lines from the first ideas right through to full production. The business management training also qualifies you to work in the purchasing or sales department.

As technical advisor for machine building and supply companies you provide the ideal mediator with the production personnel. For advisory and planning offices and also bureaus and ministries you can be a valuable employee, not only on the basis of your theoretical training but also due to your thorough practical training. Finally, the engineers are also able to take up teaching positions in technical subjects at vocational schools.

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