

A CAREER IN FOOD SCIENCE AND TECHNOLOGY

THE FOOD INDUSTRY

The Food Industry employs approximately 1 500 000 people. It is the second largest employer in South Africa, and has an annual turnover in excess of R20 billion. Technical leadership and brainpower in this industry is, and will have to continue to be provided by food scientists and technologists presently available and by those to be educated in the future.

SPECTRUM OF EXPERTISE

Food production demands a wide spectrum of expertise for the successful processing of safe and wholesome foods. Experts specialise in areas such as: baking; brewing; canning and bottling; dairy; oils and fats; fish, meat and poultry processing; cereal milling and processing; preserves; pickled foods; soft drinks, wine, beer, cider, spirits and other beverages; spices and flavourings; sugar confectionery; tea and coffee; irradiation and packaging.

It is obvious that no academic or technical training can familiarise students with such a wide range of topics. Training is therefore geared to first address the basic principles common to all, thus opening up the possibility of specialising later.

STUDY OPTIONS

There are two streams of education available at present, i.e. Food Science degrees at certain Universities and Food Technology diplomas at other universities or Institutes.

THE FOOD SCIENTIST

The food scientist is a University graduate educated in all aspects of food science who will eventually be involved in the following areas:

- Investigating the basic nature of food and its nutritional, physical and chemical properties.
- Research into new and economical production procedures.
- Development of new and safe food products.
- Control and management of the quality of processed foods.
- Management within companies involved in food processing and preserving.

A four year degree in food science provides in-depth training in chemistry, biochemistry, microbiology, physics and mathematics. It is structured to enable the student to gain a basic understanding of the physical and chemical properties and subsequent behaviour of food and food ingredients under different processing conditions.

The aim is to give candidates a thorough basic understanding of production processes, to enable them to design novel processing approaches and to undertake product development.

Food Science training:

Food science degrees are offered by the Universities of the Free State, Pretoria and Stellenbosch. These institutions offer four-year undergraduate degree courses similar in basic subject matter, but with considerable variations in ancillary subjects such as economics, biometry, cost accounting, computer science, engineering and personnel management.

Further Studies in Food Science:

Studies towards Masters and Doctoral degrees in food science can be undertaken at all the above mentioned Universities. Each of these Universities also has its own specialisation and research area which gives the prospective student the opportunity for specialising in a field of interest of his/her choice.

More Information on University Courses

More information on courses and other activities of the various departments can be obtained on the following websites:

- Department of Food Science, University of Pretoria.

<http://www.up.ac.za/academic/foodsci/index.html>

- Department of Food Science, University of Stellenbosch.

<http://academic.sun.ac.za/foodsci>

- Department : Microbiology, Biochemistry & Food Science, University of the Free State

<http://www.uovs.ac.za/biotech>

Enquiries regarding entrance qualifications and courses offered should be addressed to:

The Registrar (Academic), at the addresses listed below:

University of Pretoria, Pretoria. 0002

University of Stellenbosch, Private Bag XI, Stellenbosch. 7602

University of the Free State, PO Box 339, Bloemfontein. 9300

THE FOOD TECHNOLOGIST.

Diplomas in Food Technology provide students with a thorough theoretical, as well as practical and hands-on, approach to applied food chemistry, microbiology, process engineering and production, and quality assurance techniques. This is done to foster an understanding of the physical and chemical changes in foods during processing, as well as during the application of appropriate preservation techniques.

Food Technologists are trained in all aspects pertaining to the production, preservation and development of high quality foods. They are responsible for ensuring that processing and preservation of foodstuffs is carried out effectively thereby eliminating spoilage and waste, and often end up managing processing plants or quality assurance laboratories. In addition to working in the larger food manufacturing industry, Food Technologists are also employed by research institutes, or may be employed by government bodies charged with the monitoring of food quality standards.

Food Technology training:

Food Technology Diploma courses are offered at the following institutions: The Durban Institute of Technology, The Cape Peninsula University of Technology, The Tshwane University of Technology, The University of Johannesburg and The University of Venda.

Training at all these institutions involves fundamentally similar three-year National Diploma courses in Food Technology which includes a one-year experiential learning period in industry. During the experiential learning period students work in approved food factories, laboratories, or other related institutions and they are exposed to all aspects of food production, quality assurance, and other important tasks. After a further year of study the B.Tech-degree in Food Technology may be obtained. Candidates that proceed to the B.Tech-degree have the opportunity of specialising in areas such as: Food Production, Food Product Development, and Food Quality Assurance as main fields of study.

Further Studies in Food Technology:

Studies towards Masters and Doctoral degrees can be undertaken at some of the institutions. Research programmes, which offer students the opportunity of specialising in a field of interest of their own choice, are also in place at all the institutions.

More Information on Diploma Courses:

More information on courses and other activities of the various departments can be obtained on the following websites:

- Cape Peninsula University of Technology, Department of Food Technology (Belville and Cape Campus):

<http://info.cput.ac.za/prospectus/cluster.php?d=2>

- Durban Institute of Technology, Department of Food Technology

<http://www.dit.ac.za/?010&id=49>

- Tshwane University of Technology, Department of Food Technology

http://www.tut.ac.za/tut_web/index.php?struc=2471

- University of Johannesburg, Department of Food Technology

<http://www.twr.ac.za/detail.cfm?WIP=1.4.13.0>

- University of Venda, Department of Food Science and Technology

http://www.univen.ac.za/Agiculture/food_sc/food_staff.cfm

Enquiries regarding entrance qualifications and course duration and requirements should be addressed to:

The Registrar (Academic), at any of the Technical Universities listed below:

Durban Institute of Technology, PO Box 1334, Durban. 4000

Cape Peninsula University of Technology, PO Box 652, Cape Town. 8000

Tshwane University of Technology, Private Bag X680, Pretoria, 0001

University of Johannesburg, PO Box 17011, Doornfontein, 2028

University of Venda, Private Bag X5050, Thohoyandou, 0950