

1. Course outline

This course is designed to provide training in the operation of over-pressure retorts (e.g. Lagarde, Steriflow, KM and FMC) and standard steam retorts for processing cans, glass containers and plastic containers and the theory of thermal processing.

In order to satisfactorily complete the programme and be registered as a Certified Retort Supervisor it is necessary to:

- Achieve a pass standard in a practical examination, during which participants operate a batch retort and/or a UHT system and explain the function of the major components of each.
- Achieve a pass standard in a written examination in which participants display their understanding of theoretical aspects of the course.
- Contribute during the course and demonstrate understanding of the concepts discussed.
- Present findings of a syndicates' HACCP review of a heat processing operation conducted during the course.

2. Objectives of the course

1. To provide theoretical and practical understanding of those factors important in the selection and delivery of thermal process schedules.
2. To provide experience and understanding of the operation of over-pressure and steam retorts and/or UHT systems.
3. To provide awareness of the application of HACCP in the production of heat processed packaged foods.
4. To provide experience and understanding in the selection and use of packaging materials.
5. To provide awareness of the factors affecting the pressure generated in sealed containers during thermal processing.
6. To ensure all participants are aware of the safety risks inherent in the manufacture of heat processed packaged foods.

3. Training modules

The course is presented as a series of nine training modules and seven practical sessions the details of which are as follows:

Training modules

<i>Number</i>	<i>Subject</i>
1	Microbiology of cannery operations
2	Thermal processing concepts
3	Microbial heat resistance and determination of target values
4	Cleaning and sanitising
5	Heat penetration
6	Retorting, over-pressure and UHT systems
7	Techniques for validating retort performance
8	HACCP in manufacture of heat processed foods
9	Packaging systems for heat processed foods
10	Auditing a heat treatment

Practical and tutorial sessions (optional)

<i>Number</i>	<i>Subject</i>
1	Review of possible examination questions
2	Swabbing of hands and the environment
3	Measurement of the pH of heat processed foods.
4	Swabbing of surfaces to assess efficiency of cleaning and sanitising
5	Heat penetration rates and methods for determination of F values
6	Assessment of Temperature Distribution data
7	HACCP analysis of food production

4. Course schedule

Times and the schedule of lectures will vary according to the day to day requirements of the course; however the format is for three and a half eight-hour days with the starting time to be decided amongst participants.

The written examination shall be held on Friday morning.

The HACCP presentation shall be held on Friday morning.

The practical examination shall be held on the Thursday afternoon.

5. Course assessment

There are four ways in which you shall be assessed:

1. A written examination

This is the most important of the assessments. There shall be around 40 questions for which you shall have to provide short correct answers. You shall have as long as you need to answer this written examination; however you may not refer to the manual or notes that you have made during the week.

2. A practical examination

During this session, you shall have to demonstrate that you understand the features of the batch retort on which you have worked during the week, including the control panel and the manner in which the retort operates. You shall also have to explain the operation of the retort according to a Standard Operating Procedure. You shall have ample opportunity to familiarise yourself with this operating procedure during the week and to ask questions about the unit.

3. A HACCP presentation

As part of a syndicate you shall present the results of your analysis of a production process including identification of all Critical Control Points (CCPs).

4. Contribution during the course

The success of the programme reflects your participation through asking questions, contributing your ideas and experience and describing other ways that you may do things in your manufacturing plant. All of these components are important and therefore your contribution is expected.