

National 5 Laboratory Science

Course Content

The course provides a broad practical based introduction to laboratory science. The course will explore a variety of industries and services, and career opportunities, in science laboratories locally, nationally, and globally.

During the course you will develop a range practical skills and knowledge needed for working in different sorts of labs including measuring, weighing and preparing compounds and solutions, health and safety requirements, practical skills in microbiology, measuring radioactivity, chemical handling and laboratory instrumentation.

The course is made up of four units:

1. Careers using Laboratory Science

Introduces the wide range of industries and services, which use scientific knowledge and laboratory skills, and about the job roles which use these skills. Learners will investigate a range of career opportunities within these industries and services, and what qualifications and experiences are required for a job role. Learners will prepare for employment, further education or training through producing their own Curriculum Vitae for a specific job role in a laboratory science setting.

2. Working in a Laboratory

Provides the opportunity to gain practical experience in measuring and weighing quantities, basic laboratory skills such as handling chemicals, preparing solutions and in calculating and presenting results of practical work. Following health and safety guidelines while working in a laboratory environment is covered so learners are confident in using chemical hazard information, completing risk, how to store and dispose of chemicals, and how to deal with spillages.

3. Practical Skills

In this unit Learners have the opportunity to develop the skills most commonly used in laboratories. Learners learn how to work safely with potentially hazardous materials such as microorganisms, will measure radioactivity, as well as developing competence in using laboratory instrumentation and performing titrations, chromatography and distillations.

4. Practical Investigation

Learners will work in a team to produce a plan to complete a practical investigation to test a scientific hypothesis of their choice. This will also involve sharing of the results, conclusions and evaluations of the investigation in a scientific report.

Summary of what you will Learn

- health and safety issues of working in a laboratory
- using various types of instrumentation found in laboratories
- the ways in which science and laboratory skills are used in different industries and services
- related job roles and career opportunities
- handling chemicals and preparing solutions
- calculating and presenting results of practical work
- employability skills such as timekeeping, taking instructions and measuring.
- plan to investigate a scientific topic using practical procedures as part of a team
- present findings and produce a scientific report.

Assessment Format

Assessment will be carried out in open-book conditions, including practical activities assessed by teachers, self-evaluation of skills and producing written reports.

There is no external exam for this course

Key Skill Development

This course will develop a range of skills:

Core Skills: communication, numeracy, information and communication technology, problem solving and working with others.

Scientific skills: processing data, analysis, evaluation and drawing conclusions.

Laboratory skills: measuring, weighing and preparing compounds and solutions; and health and safety requirements, microbiology, measuring radioactivity, chemical handling and laboratory instrumentation.

Employability skills: (generic skills and attitudes valued by employers) time-keeping, self-evaluation skills, positive attitude to learning, flexible approaches to solving problems, adaptability and positive attitude to change, confidence to set goals, reflect, and learn from experience, specific vocational skills and knowledge.

Associated Industries and Careers (include photo of industry)

Successful completion of this course can lead to another science subject at National 5, Biology, Chemistry, Health Science, Science and health, or level 6 Scientific Technologies.

The Course will help learners prepare for employment in a range of industries:

1. Animal, Land and Environment: agricultural chemical manufacturing companies, arable or livestock farms, fisheries, veterinary surgeries, educational institutions and zoos and wildlife parks.
2. Health and Medicine: hospitals and health centres, dental practices, universities, sports science.
3. Industries: chemical manufacturers and material science, food processing and manufacturing, breweries and drink manufacturers

Department hints, tips and useful links

Entry requirements: Any Science studied in S3 or to national 4 level. While previous experience and knowledge of Chemistry is helpful it is not essential if your mathematics is sufficient.

Useful links

SQA: [More detailed information in the course units and required components for assessment.](#)

[Planitplus.net](#): Useful information guides to see career pathways this subject can lead to within; Science and Maths, Manufacturing Industries, and Health and Medicine.

