



Preparation for Year 12



Applied
Science



Kaverian
College

Your Induction will take place over the first weeks and help you start well on your course.

Studying towards your BTEC qualification will prove very demanding. You must show a high level of commitment, dedication and intellectual skill. We want you to achieve your personal best, but to do this you will need to develop your skills. These are detailed below: The bulk of this work should be carried out in your own time as a homework / study periods in college / learning skills.

Self-Management

Readiness to be take responsibility, be flexible, show resilience, be self-starting, develop assertiveness, improve time management to ensure deadlines are met , be ready to improve your own performance based on feedback and be a reflective learner.

Team Working

Respecting others, co-operating, negotiating, contributing to discussions, and an awareness of interdependence with others.in a classroom and laboratory setting.

Laboratory procedures and safety awareness

Understand the general safety rule / procedures in the lab. Understand hazard information to ensure the safe handling of potentially harmful chemicals /substances. Demonstrate the safe and correct handling of sensitive / fragile scientific equipment.

Problem solving

Be able to plan practical's applying logical / creative thinking to develop appropriate solutions. Analyse raw data; be able to draw reasonable conclusions from data provided. Be able to evaluate data and justify conclusions.

Communication and literacy

Application of literacy, the ability to produce clear, structured written work and oral literacy, including listening and questioning.

Application of numeracy

Be able to read scales / number on scientific equipment with, manipulation of numbers for estimating and display in tables or graphs. Use appropriate calculations skills to generate numbers for comment on accuracy precision and reliability of data estimating and applying formulae.

Application of information technology

Basic IT skills, including familiarity with word processing, spread sheets, file management and use of internet search engines.

To ensure that you make a good start on these skills at Xaverian College and you receive support focussed on your needs, we have organised three induction activities that you will need to complete during the first few weeks of the course. The completion of these tasks will be monitored to help improve your achievement on the course.

Assignment One Skills and Qualities

Name: _____

Complete skills sorting activity (take a photo of your answers)

| |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Think about the hardest working student you can remember. On a scale of 1-10, how hard do you think you work compared to them?</p> <p>A lot less 1 2 3 4 5 6 7 8 9 10 The same</p> |
| <p>What do you want to be doing this time next year? What's your objective?</p> |
| <p>What grades do you need to achieve on this course to reach that objective?</p> |
| <p>Use the 'Grade Predictor' and write below what you must achieve in each unit to achieve the grades you need. How many Ps, Ms and Ds do you need?</p> |
| <p>In the past only students who work at levels 9 or 10 fully achieve the objectives they've set in this exercise. These are the students who work at home, work during their study periods, work in the library, attend subject support, demonstrate good time management, proofread their work and meet all deadlines. Has that been you?</p> |

After reading the above statement, write three things below you will try to improve so you reach your objective.

1.

2.

3.

Scenario

A sample of 25 of last year's BTEC students were surveyed. To see if they could recall health and safety rules and procedures.

Each student was asked to recall 5 health and safety rules /practices Listed below are the findings of the survey (most to the least common responses in descending order)

| Safety rule / practice | Responses | % |
|------------------------------------------------|-----------|-----|
| No eating / drinking | 24 | |
| Ware lab coats | 25 | |
| Ware goggles / glasses | 23 | |
| No running | 12 | |
| Tie hair back | 11 | |
| Bags and coats away in designated area | 7 | |
| Report accidents to teachers | 5 | |
| Use fume hood | 4 | |
| Tidy equipment away | 3 | |
| Keep work tidy on trays | 3 | |
| Ware gloves | 2 | |
| Don't leave glassware by the edge of the bench | 2 | |
| Wipe benches down at the end of experiment | 2 | |
| Don't apply make-up | 1 | |
| Arrive on time for instructions | 1 | |
| TOTAL | 125 | 100 |

Task one

Using the data above

- Transfer these numbers to Excel if you wish, to create a spread sheet.
- Present the votes cast for each choice as a percentage of the total,
- Produce a chart to display the data in a suitable clear format..

Task two

The list above identifies some of the safety precaution and procedures for safe practice. There are many more things that might need to be considered.

Produce a **mind map** with the necessary health and safety precautions that must be followed in a laboratory.

Task three

Many chemicals (solids / solutions) have warning symbols that indicate a possible hazard (CLP symbols). You need to know what these mean, to protect you, others working in your vicinity and the environment.

Research these symbols, produce a PowerPoint which describes each of these hazard symbols, include an example of a hazardous solid or solution that may be labelled with these symbols.

Task four

The college provides lab coats that are washed fairly regularly! You may use your own if you wish but it will be your responsibility.

Find the cost of a standard white cotton lab coat from a reputable supplier. If a bulk order of 25 is needed. Carry out research on the internet to find a good deal.

Use screen shots cut and pasted into a word document to show your research. Reference web sites visited in a bibliography

Show the costs / discount / vat / delivery and any other relevant information.

Careful! Do not actually order any.

Justify why you chose this particular lab coat

Write a summary of which hazards the coat will protect against and the ones it will not. Give examples of chemicals where possible to explain your reasoning.

When you have finished all the 4 tasks in assignment 2 it is to be handed in by the deadline given to you by your teacher.

When work is submitted in BTEC an appropriate submission sheet must be completed.

Print off the 'BTEC induction Submission Declaration Form' from the intranet, fill it in, and attach it to the front of your report place all items in a plastic wallet and deliver by the agreed time or earlier!

Assignment 3

Scenario

Your objective is to complete a work placement at the end of the summer term. In this induction period you are going to find realistic and potential placements for you to participate in. These may include University research / teaching labs, Museums, hospitals departments e.g. radiology, pathology Scientific / manufacturing / engineering companies with research / quality labs. Schools (prep room supporting science practicals. Work on the sales floor/stockroom for a company selling technical scientific equipment Curries / Maplin Assisting / shadowing a science professional e.g. Vet / paramedic / Pharmacist.

For legal reasons there are strict requirements applied to the placement you arrange. Your tutor will make these clear to you and whether the choices you have made are suitable.

Task One – during the induction period

Create a CV and draft a letter, email and a telephone script that you could use to contact each of the businesses you will apply to for a placement. When you are happy with your drafts, save them. They should be ready to hand to your teacher with a 'BTEC induction Submission Declaration Form' when term begins in September.