

# BTEC Level 2 Technical Diploma in Laboratory Science: sample delivery plan

## Introduction

This document is aimed at supporting tutors and those delivering BTEC L2 Technical qualifications from September 2017. Clear unit planning and understanding of key deadlines are essential for a successful delivery programme. We have therefore produced two sample delivery plans showing how the BTEC Level 2 Technical Diploma in Laboratory Science could be delivered over 6 or 12 months, highlighting assessment milestones and indicating where you can teach units holistically.

## Overview of course delivery and assessment

The BTEC Level 2 Technical Diploma in Laboratory Science has 360 GLH and the TQT (total qualification time) is 455 hours. It consists of six mandatory units, two of which are externally assessed.

## Involving employers in the assessment/delivery

Employer involvement in the delivery and/or assessment of technical qualifications is essential. You will need to give evidence of how you have provided opportunities for all your learners to undertake meaningful activity involving employers. 'Meaningful activity' could include:

- Structured work experience
- Projects, exercises, tasks or assessments set with input from industry practitioners
- Units delivered or co-delivered by an industry practitioner, e.g. masterclasses or guest lectures
- Industry practitioners operating as expert witnesses, contributing to the assessment of a learner's work.

For this qualification, employer involvement must be with employers from the Laboratory Science sector. Meaningful employer involvement, as defined above, must contribute significantly to at least one mandatory unit. The units in which employers could become involved in the delivery and/or assessment of this qualification are listed below:

- Unit 1: Laboratory Health and Safety
- Unit 2: Working in a Science Laboratory
- Unit 4: Preparing and Clearing Down a Laboratory
- Unit 5: Handling Scientific Data
- Unit 6: Planning a Scientific Investigation

## Which units are externally assessed?

**Units 1 and 2** are externally assessed. Assessment for Unit 1 and Unit 2 takes the form of onscreen tests, available on demand, with the first assessment in January 2018. These tests are set and marked by Pearson. The tests contain different types of question and are each worth 60 marks.

## Internally assessed units

**Units 3, 4, 5 and 6** are assessed through assignments set and marked by the centre. The assessment allows learners to apply technical knowledge and demonstrate mastery of practical and technical skills through realistic tasks and activities.

Unit 6 provides the main synoptic assessment for this qualification. It is designed to take place towards the end of the programme and draws on the learning throughout. This synoptic unit is designed to showcase the skills and knowledge development throughout the course, and may be a useful discussion point during an interview when progressing to employment as a laboratory assistant or apprentice, or to further study.

## Induction

Centres are encouraged to timetable a period of induction for learners at the start of the programme. This should include information on topics such as the structure of the units, how to use an assignment brief, importance of command words, how to work to meet deadlines, consequences of not meeting deadlines, how to reference work and the importance of evidence submitted for assessment being independently produced, valid and authentic. Centre policies on malpractice and plagiarism should be explained.

This document focuses on providing key dates to plan around and examples of how your course delivery could be structured, set out in the sections below:

### Section 1: Sample delivery plan – 12-month model

- A chart setting out key deliverables over a 12-month period (2 semesters)
- Tables showing week-by-week delivery breakdown
- Rationale for the suggested plan

### Section 2: Sample delivery plan: 6-month model

- A chart setting out key deliverables over a 6-month period (1 semester with 2 x 12-week teaching blocks)
- Tables showing week-by-week delivery breakdown
- Rationale for the suggested plan

Further support can be found within the relevant specification on our website (<http://qualifications.pearson.com/en/qualifications/btec-technicals/laboratory-science.html>).

## Section 1: Sample 12-month delivery plan

This plan shows how you could deliver the teaching and learning over two semesters (12 months). It is intended as guidance and is not the only possible model. You can adapt it to suit your local needs.

	SEMESTER 1		SEMESTER 2		<b>TOTAL HOURS (GLH)</b>
	<b>Unit No.</b>	<b>Classroom hours</b>	<b>Unit No.</b>	<b>Classroom hours</b>	
	1	60	2	60	120
	4	60	5	60	120
	3	60	6	60	120
<b>TOTAL HOURS PER SEMESTER</b>	180		180	360	
<b>PER WEEK (18-week semester)</b>	10		10		

## Week-by-week breakdown over 12 months

### Key

<b>R</b>	Revision for external assessment	<b>LA</b>	Learning aim
<b>EXT</b>	External assessment	<b>IND</b>	Induction
<b>SA</b>	Summative assessment		

### SEMESTER 1

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>	<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>
<b>Unit 1</b>	IND	LA A	LA A	R	LA B	LA B	R	R	EXT
<b>Unit 4</b>								LA A	LA A

### SEMESTER 1 (CONT.)

	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>	<b>Week 13</b>	<b>Week 14</b>	<b>Week 15</b>	<b>Week 16</b>	<b>Week 17</b>	<b>Week 18</b>
<b>Unit 3</b>	LA A	LA A	SA	LA B	LA B	SA	LA C	LA C	SA
<b>Unit 4</b>	SA	LA B	SA	LA C	SA				

## SEMESTER 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
<b>Unit 2</b>					LA A	LA A	LA A	R	LA B
<b>Unit 5</b>	LA A; LA B	LA A; LA B	SA	LAC	LAC	SA			

## SEMESTER 2 (CONT.)

	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18
<b>Unit 2</b>	R	LA C	R	R		EXT			
<b>Unit 6</b>					LA A	LA B	SA	LA C	SA

## Sample 12-month plan – rationale

### Suggestions for which units to teach in Semester 1

- Semesters have been assumed to be 18 weeks, allowing for 16–17 weeks of teaching and 1-week induction in the first semester.
- Unit 1 gives learners the knowledge, skills and understanding underpinning their development during the course. This unit ensures that learners have the knowledge, skills and experience to work safely in the laboratory throughout the course. Unit 1 is, in this example, delivered as a standalone unit to allow learners to focus on developing their knowledge for external assessment.
- Teaching and learning of Unit 1 must cover all of the unit content, and tutors must ensure that learners are fully prepared for the assessment. Assessment is by external examination, which is set and marked by Pearson, and is available onscreen and on-demand when learners are ready. Opportunities for formative assessment and adequate revision must be built into the teaching, in order to ensure that learners are ready to sit the onscreen examination. Plenty of time also needs to be allowed for exam practice sessions, although it is recommended that the external assessment of Unit 1 takes place shortly after the teaching and formative assessment has taken place.
- Units 4 and 3 make up the rest of Semester 1. These units are internally assessed by assignment briefs after the delivery of each learning aim. Centres are advised to encourage and incorporate meaningful employer involvement into their teaching during Units 3 and 4.
- Unit 4 can be delivered in sync with Unit 3 in order to provide a holistic approach, where learners experience preparing and clearing laboratories for the duties that they may perform when assisting in laboratory activities.

### Suggestions for which units to teach in Semester 2

- Semester 2 begins with the delivery and assessment of Unit 5 and includes teaching of learning aims A and B combined, before the summative assessment of these aims by the assignment brief. This will allow learners to design the template for recording the scientific data that they collect. Learners will then present this data through the teaching and assessment of learning aim C.
- It is then advised that the teaching of the Unit 2 content follows after unit 5, so that the external assessment can take place in Semester 2. Teaching and learning of Unit 2 must cover all of the unit content and tutors must ensure that learners are fully prepared for the assessment. Assessment is by external examination that is set and marked by Pearson, and is available onscreen and on-demand when learners are ready. Opportunities for formative assessment and adequate revision must be built into the teaching, in order to ensure that learners are ready to sit the onscreen examination. Plenty of time also needs to be allowed for exam practice sessions, although it is recommended that the external assessment of Unit 2 take place shortly after the teaching and formative assessment has taken place. Unit 2 is, in this example, delivered as a standalone unit to allow learners to focus on developing their knowledge for external assessment.
- It is suggested that Unit 6 is taught at the end of Semester 2, as learners will need to be fully prepared for the synoptic element of the unit by having covered Units 1–5.

## Section 2: Sample 6-month delivery plan

This plan shows how you could deliver the teaching, learning and assessment over one semester consisting of two 12-week blocks. It is intended as guidance and is not the only possible model. You can adapt it to suit your local needs.

	<b>BLOCK 1: Weeks 1–12</b>		<b>BLOCK 2: Weeks 13–24</b>		<b>TOTAL HOURS (GLH)</b>
	<b>Unit No.</b>	<b>Classroom hours</b>	<b>Unit No.</b>	<b>Classroom hours</b>	<b>Classroom hours</b>
	1	60	2	60	120
	3	60	5	60	120
	4	60	6	60	120
<b>TOTAL HOURS PER TEACHING BLOCK</b>	180		180		360
<b>PER WEEK (12-week block)</b>	15		15		

## Week-by-week breakdown over 6 months

### Key

<b>R</b>	Revision for external assessment	<b>LA</b>	Learning aim
<b>EXT</b>	External assessment	<b>IND</b>	Induction
<b>SA</b>	Summative assessment		

### BLOCK 1

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>	<b>Week 6</b>	<b>Week 7</b>	<b>Week 8</b>	<b>Week 9</b>	<b>Week 10</b>	<b>Week 11</b>	<b>Week 12</b>
<b>Unit 1</b>	IND	LA A	LA A	LA A	LA A	R	LA B	LA B	LA B	LA B	R	EXT
<b>Unit 3</b>	IND	LA A	LA A	LA A	SA	LA B	LA B	SA	LA C	LA C	LA C	SA
<b>Unit 4</b>	IND	LA A	LA A	SA	LA B	LA B	LA A	SA	LA C	LA C	LA C	SA

### BLOCK 2

	<b>Week 13</b>	<b>Week 14</b>	<b>Week 15</b>	<b>Week 16</b>	<b>Week 17</b>	<b>Week 18</b>	<b>Week 19</b>	<b>Week 20</b>	<b>Week 21</b>	<b>Week 22</b>	<b>Week 23</b>	<b>Week 24</b>
<b>Unit 2</b>	LA A	LA A	LA A	R	LA B	LA B	R	LA C	LA C	R	R	EXT
<b>Unit 5</b>	LA A	LA B	SA	LA C	LA C	SA						
<b>Unit 6</b>							LA A	LA A	LA B	SA	LA C	SA

## Sample 6-month plan – rationale

### Suggestions for which units to teach in Block 1

- The semester has been assumed to last 24 weeks with two blocks of teaching of 12 weeks each (including 1-week induction at the start of the semester).
- This plan shows how units can be run alongside each other in groups of three. In Block 1, Units 1, 3 and 4 are taught alongside each other.
- Unit 1 gives learners the knowledge, skills and understanding underpinning their development during the course. This unit ensures that learners have the knowledge, skills and experience to work safely in the laboratory throughout the course. Teaching and learning of Unit 1 must cover all of the unit content and tutors must ensure that learners are fully prepared for the assessment. Assessment is by external examination that is set and marked by Pearson, and is available onscreen and on-demand when learners are ready. Opportunities for formative assessment and adequate revision must be built into the teaching, in order to ensure that learners are ready to sit the onscreen examination. Plenty of time also needs to be allowed for exam practice sessions, although it is recommended that the external assessment of Unit 1 take place shortly after the teaching and formative assessment has taken place.
- Units 3 and 4 make up the rest of Block 1. These units are internally assessed by assignment briefs after the delivery of each learning aim. Centres are advised to encourage and incorporate meaningful employer involvement into their teaching during Units 3 and 4.
- Unit 3 can be delivered in sync with Unit 4 to provide a holistic approach, where learners experience preparing and clearing laboratories for the duties they may perform when assisting in laboratory activities.

### Suggestions for which units to teach in Block 2

- Teaching Unit 2 across the 12-week teaching Block 2 with external assessment takes place at the end of the teaching block. Teaching and learning of Unit 2 must cover all of the unit content, and tutors must ensure that learners are fully prepared for the assessment. Assessment is by external examination that is set and marked by Pearson, and is available onscreen and on-demand when learners are ready. Opportunities for formative assessment and adequate revision must be built into the teaching, in order to ensure that learners are ready to sit the onscreen examination.
- Unit 5 can be delivered alongside the first six weeks of Unit 2 to ensure that, before beginning Unit 6 in the final six weeks, learners have covered all of the unit content. Unit 6 is synoptic and therefore requires learners to be fully prepared to draw on knowledge, understanding and skills developed in Units 1–5.