

A MOODLERS GUIDE TO BTECS

Lewis Carr

Updated August 2014

A MOODLERS GUIDE TO BTECS

Updated August, 2014

About the Author

Lewis Carr has worked in Further Education for the past 11 years prior to joining Moodlerooms. Lewis has been involved in many large-scale Moodle deployments and has supported administrators, academic teaching staff and business support staff on the effective use of Moodle. As part of this, Lewis has spent huge amounts of time over the years developing BTEC courses and devising ways in which Moodle can be utilized to accommodate BTEC courses more effectively.

And this information is now shared with you.

Overview

Until the introduction of Advanced Grading, it was challenge for tutors to grade BTEC assessments effectively in Moodle.

Many organisations used a custom Moodle scale to reflect the final grade (Refer, Pass, Merit Distinction).

There was no clean way to record the assessment criteria and show how the grade was awarded.

Advanced grading allows organisations to create rubrics.

Moodle users have several BTEC solutions available to them. One solution is the “Moodle Grades” plugin from Bedford College. And the other is the BTEC Marking grading method by Marcus Green.

From experience, I know that many FE colleges already have commercial student tracking systems in place, as well as ILPs and e-portfolios. So the aim of this document is to utilize what you already have. And provide a solution that lets you accept and grade BTEC submissions via Moodle and export the data you require to external systems.

This document also looks at suggested ways in which to setup BTEC courses and discusses the advantages and disadvantages of using shared modules and Meta courses versus Moodle topic format based setups.

Setting up a BTEC Course

There is no right or wrong way to setup BTEC courses on Moodle. The decision is based upon many factors, such as tutor preference, how the units are taught and the flexibility you need in your setup.

There are 2 ways in which I have setup Moodle effectively for BTEC Courses.

1. Using a large single course with topics (each topic renamed to the unit titles taught within the BTEC)
2. A single enrolment entry course and each unit built as a separate Moodle course. Each unit/module is a Meta course so learners are enrolled onto the parent course and therefore gain access to each of the units. Or you can use self or manual enrollment.

(I hasten to add that a combination of the two can work in certain situations)

So which setup should you choose?

This depends on whether or not you need to share units. One of the biggest complaints by FE academic staff that use Moodle is that they teach the same module across different courses with various learners. And managing and updating resources on the same course, multiple times, is a challenge to them. Hence the need for a separate course, for each unit, is a must. It allows them to provide access on a unit-by-unit basis rather than a course basis. If however the tutors know exactly which units they will be teaching for the BTEC, and presuming all their learners are taking the same units, then a single Moodle course works best. The table below highlights the advantages and disadvantages of using this method.

Single Course Advantage	Single Course Disadvantage
Easier to manage enrolments – can use one single course code.	Not possible to share individual units with other courses, you have to share the entire course.
All grades in one place- gradebook will show all grades for all assignments across all the units.	Course becomes quite large with content overload unless good course design techniques are employed.
Easier to manage as all content is inside one course	Tutors have to build units and content multiple times across multiple courses (where applicable)
Easier to report on as all report data refers to one single course	

More often than not, learners can chose their units and therefore not all students on the BTEC course are studying the same units. And some units may be shared across different levels or indeed different courses. If this is the case, then a

separate Moodle course can be used for each unit. The table below highlights the advantages and disadvantages of using this method.

A course for each unit Advantage	A course for each unit Disadvantage
Easier to manage content- edit content once and the change is reflected for all learner on the unit	Groups are essential to manage learners. Especially when learners are enrolled form multiple courses. With meta courses, groups are not automatically created, so a manual process is required here.
Allows more flexible access to the module (can be a meta course or can have self-enrollment so learners can enroll on the units they select)	Meta courses are difficult to manage for non-technical Moodle administrators. It can be troublesome to un-enroll learners and trace back where the learners point of entry came from.
Can share content across different campuses and courses	The gradebook will only show grades for assignments within this unit. You will not be able to see all grades on the whole course from one single gradebook screen.
Courses are less cluttered as content is broken down into units – less scrolling!	Reporting is done on a course-by-course basis, so in core Moodle, you will have to access separate reports for each unit and combine them to produce course reports. (Moodlerooms reports do allow you to report at category level or combine multiple courses.)
	BTEC units won't have an MIS course code, so reporting on them is difficult. And automated-enrollments without course codes aren't achievable. (Unless you can assign a code to them that reflects enrollment data in your MIS platform that is)

A real-life example

In this example we shall build out a BTEC course using the single course setup. The other processes such as creating assignments and criteria apply to both and we can always split our large course into smaller courses later when the need arises. So if you are creating BTEC courses for the first time then I urge you to try this method first.

Let's start by creating a new course category called "Engineering".

And let's create a course called "BTEC Level 2 First Award in Engineering".

The units that make up this qualification are:

1. The Engineering World
2. Investigating an Engineered Product
3. Health and Safety in Engineering
4. Engineering Materials
5. Machining Techniques
6. Interpreting and Using Engineering Information
7. Mathematics for Engineering
8. Operating an Efficient Workplace
9. Computer Numeric Control Programming
10. Electronic Circuit Design and Construction

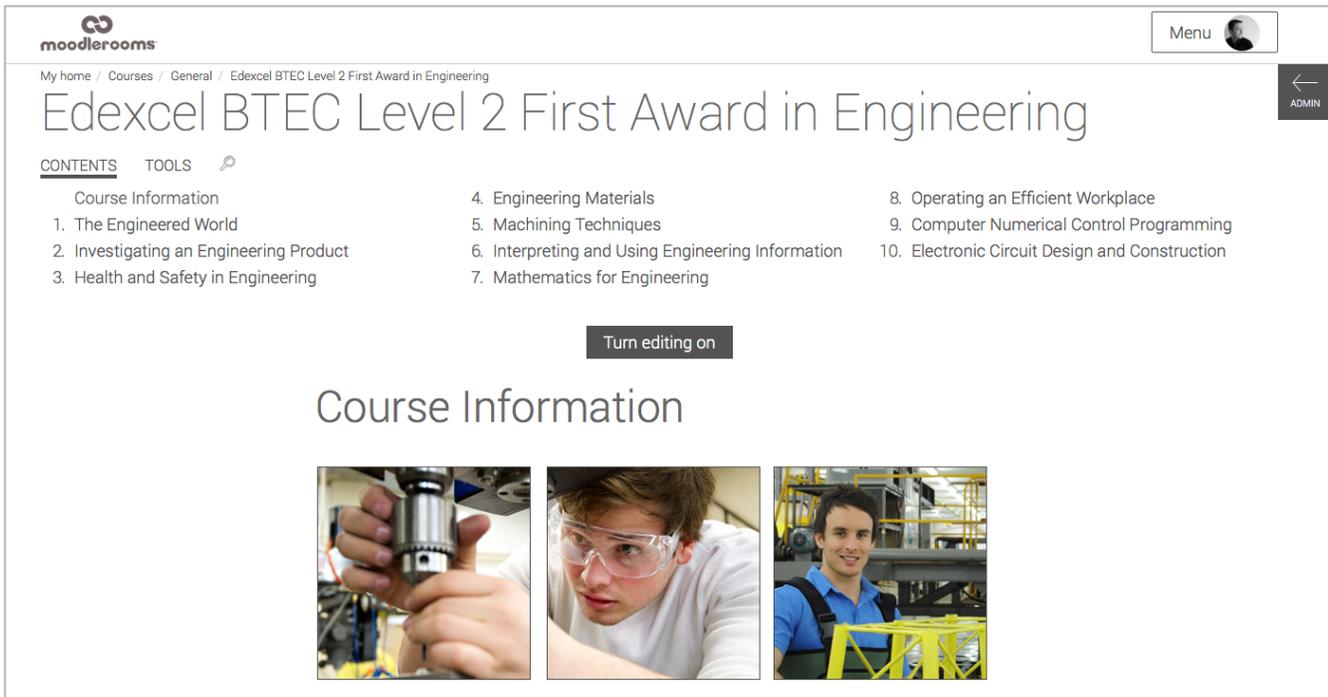
We can go ahead and get the supporting Booklet from Edexcel, which will help us create the assignments and the criteria.

<http://www.edexcel.com/quals/firsts2012/engineering/Pages/default.aspx>

The specification document contains this information and explains each unit and the learning outcomes expected.

As we have 10 units, it makes sense to use the "topics course format" in Moodle and set the number of topics to be displayed to 10 (this is found in the course settings in the admin block).

Now rename each of the topics with the names of the units. The screenshot below may look slightly different to your Moodle depending on the theme used.



The screenshot shows a Moodle course page with the following elements:

- Header:** moodlerooms logo, Menu button with a user profile icon, and a breadcrumb trail: My home / Courses / General / Edexcel BTEC Level 2 First Award in Engineering.
- Title:** Edexcel BTEC Level 2 First Award in Engineering
- Navigation:** CONTENTS (active), TOOLS, and a search icon.
- Course Information List:**
 - 1. The Engineered World
 - 2. Investigating an Engineering Product
 - 3. Health and Safety in Engineering
 - 4. Engineering Materials
 - 5. Machining Techniques
 - 6. Interpreting and Using Engineering Information
 - 7. Mathematics for Engineering
 - 8. Operating an Efficient Workplace
 - 9. Computer Numerical Control Programming
 - 10. Electronic Circuit Design and Construction
- Buttons:** A 'Turn editing on' button is centered below the list.
- Section Header:** Course Information
- Images:** Three small images showing students in a workshop setting: one working on a component, one wearing safety glasses, and one standing in a factory environment.

Splitting course units for sharing

If you wish to share units with other courses then for this BTEC Engineering example you would need 11 separate Moodle courses. One course would be used to enroll students from your MIS system (if using automated enrolments). The remaining 10 courses would be the units and these would be Meta courses linked to the parent course with the MIS course code.

See <http://docs.moodle.org/22/en/Metacourse> for help with Meta courses.

Of course, you may require more granularity in your enrollments so you can use manual enrolment or simply use self-enrolment so the learners can enroll themselves onto the units they have chosen to study.

Install the BTEC Grader Plugin

Before we can create the assignments you need to ensure that the BTEC Marker plugin is installed and available on your Moodle site. If it's not then contact either your Moodle Administrator, Moodle hosting partner or if you have access to the server you can install it yourself.

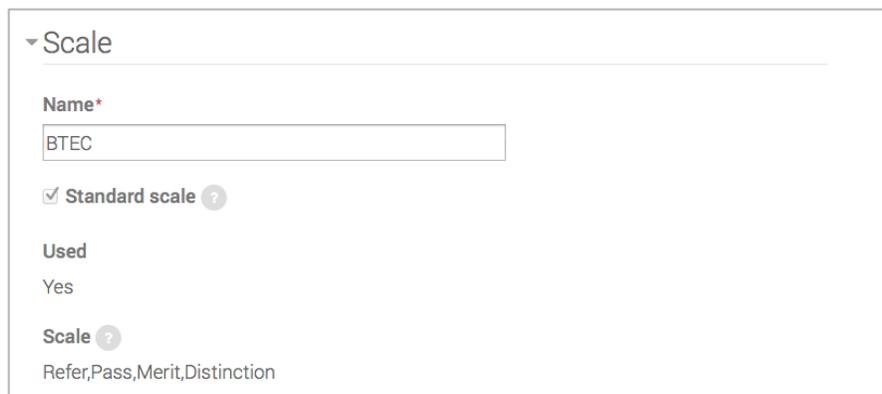
https://moodle.org/plugins/view.php?plugin=gradingform_btec

Create a standard (site-wide) grading scale

If you do not currently have a BTEC grading scale (see <http://docs.moodle.org/24/en/Scales>) then now is the time to create one. Your Moodle administrator will have to do this.

From the Site Administration menu

1. Select **Grades > Scale**
2. Click Add a new scale
3. Complete the form as illustrated in the image below, making sure to check the box that says "Standard Scale" so that the scale can be used site-wide by all tutors.



▼ Scale

Name*

BTEC

Standard scale ?

Used

Yes

Scale ?

Refer,Pass,Merit,Distinction

Create your first assignment

From within your course, create an assignment in the usual way, only this time, under the *Grade Heading*, change the grading method to “**BTEC Marking**”.

And make sure to change the Grade to your BTEC scale as shown:



The screenshot shows a form section titled "Grade" with a dropdown arrow. Below the title, there are two fields: "Grade" and "Grading method". The "Grade" field has a dropdown menu showing "Scale: BTEC". The "Grading method" field has a dropdown menu showing "BTEC marking" and a question mark icon to its right.

TOP TIP:

Also, if you are going to export the grades for these assignments into an external tracker then you may be as well adding a unique IDnumber to the assignment so that you have something to match up in both systems. As shown. Speak to your MIS administrator about assignment codes and how to find these.

When you save the assignment you will be able to configure the grade criteria for the assignment. If this is your first grading rubric then select “**Define new grading from scratch**”.

This grading method supports templates, so once you have built a grading criteria you can save and re-use them as template for other assignments.

You will need access to the Edexcel document that you downloaded earlier. We are now going to copy and paste the grading criteria from this document into our new grading form in Moodle. This is what the data looks like in the Edexcel PDF document:

Assessment criteria

Level 1	Level 2 Pass	Level 2 Merit	Level 2 Distinction
Learning aim A: Know about the properties of common engineering materials and selection for engineering applications			
1A.1 Identify an example of each type of material used in given engineering applications.	2A.P1 Describe examples of each type of material and the properties of these materials in engineering applications.	2A.M1 Explain the choice of material for engineering applications.	2A.D1 Compare advantages and disadvantages of material choices for engineering applications.
1A.2 Carry out a simple mechanical test on an engineering material	2A.P2 Carry out a range of simple mechanical tests on engineering materials and interpret the results		
1A.3 Describe a heat treatment process to alter a ferrous materials property.	2A.P3 Describe two heat treatment processes that alter a ferrous materials properties.		
Learning aim B: Know about the supply and sustainable use of engineering materials and selection for an engineering product or activity			
1B.4 Outline the environmental impact of a given engineering product or activity.	2B.P4 Describe sustainable use of materials in a given engineering product or activity.	2B.M2 Assess whether materials have been used sustainably in an engineering product or activity.	2B.D2 Analyse the sustainability of an engineering product or activity, including materials used and forms of supply.*
1B.5 Identify the forms of supply for materials in an engineering product or activity.*	2B.P5 Select appropriate forms of supply for materials in a given engineering product or activity.*	2B.M3 Justify the selected forms of supply for materials in an engineering product or activity.*	

And this is what it looks like in Moodle. You need to add a new criterion for P1, P2, P3, P4, P5, M1, M2, M3 etc....
 And copy the requirement into each so that it looks like the screenshot below:

BTEC marking ?

×	P1
↓	Requirements for completing criteria Describe examples of each type of material and the properties of these materials in engineering applications.
↑	P2
×	Requirements for completing criteria
↓	Carry out a range of simple mechanical tests on engineering materials and interpret the results
↑	P3
×	Requirements for completing criteria
↓	Describe two heat treatment processes that alter a ferrous materials properties.
↑	P4
×	Requirements for completing criteria
↓	Describe sustainable use of materials in a given engineering product or activity.
↑	P5
×	Requirements for completing criteria
↓	Select appropriate forms of supply for materials in a given engineering product or activity.
↑	M1
×	Requirements for completing criteria
↓	Explain the choice of material for engineering applications.
↑	M2
↓	Requirements for completing criteria

N.B Ensure that you hide the BTEC definition to students:

BTEC marking options

- Show BTEC definition to students
- Show marks per criterion to students
- Display description to those being graded

Repeat the process

Yes it's a boring process. And yes, you have to repeat this for each of the units. But you can simply duplicate assignments that use the same marking criteria. It took me the best part of 6 hours to build the course, create all the units and to copy and paste each of the grading criteria and create all the assessments for the entire course. With a team of tutors this could be drastically reduced. And remember, you don't need to do all this at once. Simply focus on the assignments that are due first and add the other assignments and marking criteria when they are required. For this BTEC Engineering course there were 8 grading criteria forms to create and 23 separate assignment activities in total.

Configuring The Gradebook

The grades for each submission will automatically appear in the gradebook for each unit as you grade them. You may wish to group the assignments using gradebook categories.

http://docs.moodle.org/24/en/Grade_categories

By default, your unit total may appear as a number, to change this, choose:

From the gradebook ,within the settings drop down menu:

Course > Settings

Change the grade display type to “**real**”

Then set the aggregation to Lowest Grade and set scale to BTEC in category total.

Again this is explained perfectly in the documentation at:

http://docs.moodle.org/24/en/BTEC_marking

You should be able to see each assignment and the grade given to each learner. You should also be able to see the total grade for the unit if you have this visible.

N.B

You may prefer to do your aggregations and course totals in your commercial external tracker. Your organisation most likely has this setup already. If this is the case, you simply need to export your gradebook data into a CSV file that your external system can support.

Grading/Marking Assignments

Now your course is fully configured, your assignments ready and your marking criteria setup, all you need to do now is wait for student submissions. If your assessment doesn't involve actually submitting something via Moodle (perhaps its externally marked or takes place in the workplace) then you have 2 options. You can create an offline assignment type or simply add a new graded object in the gradebook.

Grading assignments via the new BTEC Marking method is easy. Simply go to the assignment you wish to grade and click “View/Grade All Submissions”. Then click on the grade icon.

You will see a grading screen with your criteria included. Place a check in the radio button next to each criterion to highlight whether or not the student achieved the mark. You can add comments in the comments box or you can use the Frequently Used Comments if you configured them when setting up the grading criteria.

Grade

Grade:

P1

Select and apply appropriate input, process and output, and passive components for a circuit.

Student has clearly demonstrated the input and output process.

no yes

P2

Describe the characteristics of power supplies and carry out simple and complex calculations using units of current, resistance, voltage and power in electronic circuits.

Student clearly describes the characteristics of power supplies

no yes

P3

Describe the design features of

Student has identified he is able to describe the features of a simple circuit.

Tracking progress in the Gradebook

Once you have graded an assignment, the grade will appear in the Moodle gradebook. If you have used grade categories you will be able to see the average grade per category and it also makes sorting assignments easier.

Grader report

View Categories and items Scales Letters Import Export Settings My preferences

Grader report Joule Gradebook Overview report User report

Separate groups: All participants

Surname First name		Email address	Edexcel BTEC Level 2 First ...			
			Investigating an ...			
			Assessment - Product ...	Assessment - Materials and ...	Assessment - Manufacturing ...	Assessment - Quality
	Albert Einstein	alberteinstein@icarr-sandbox.mrooms.net	Refer	Pass	Merit	Distinction
	Joe Hart	joehart@icarr-sandbox.mrooms.net	Refer	Pass	Merit	Refer
	David Beckham	davidbeckham@icarr-sandbox.mrooms.net	Pass	Merit	Merit	Distinction
	David Hockney	davidhockney@icarr-sandbox.mrooms.net	Merit	Distinction	Pass	Merit
	Hugh Grant	hughgrant@icarr-sandbox.mrooms.net	Refer	Distinction	Pass	Pass
	Winston Churchill	winstonchurchill@icarr-sandbox.mrooms.net	Refer	Merit	Pass	Distinction

Joule Gradebook

Joule Gradebook

View Categories and items Scales Letters Import Export Settings My preferences

Grader report Joule Gradebook Overview report User report

All Categories All participants

Surname First name	Investigating an ...	Health and Safety in ...	Engineering Materials	Machining Techniques	Interpreting and Using ...
Albert Einstein	Refer	Distinction	Refer	Merit	
Joe Hart	Refer	Distinction	Refer	Merit	
David Beckham	Pass	Distinction	Pass	Pass	
David Hockney	Pass	Merit	Merit	Refer	
Hugh Grant	Refer	Pass	Pass	Distinction	
Winston Churchill	Refer	Refer	Pass	Pass	

Export the Gradebook

The final piece of the puzzle is to export the gradebook data into a CSV or Excel Spreadsheet so you can import the information into an external system.

To do this, we use the export option within the Moodle Gradebook.

From the Gradebook Dropdown menu select Export Excel Spreadsheet. In the options you can choose which assignment grades you wish to export from the “Grade Items to be Included” section. Simply check or de-check your choices.

You now have your full BTEC course grades in a spreadsheet, which you can manipulate, delete rows, add calculations and make other edits that you need before importing into your external system.

Edexcel BTEC Level 2 First Award in Engineering Grades.xlsx

Search in Sheet

Home Layout Tables Charts SmartArt Formulas Data Review

Font: Calibri, 16, Bold, Italic, Underline, Text Color, Background Color

Alignment: abc, Wrap Text, Merge

Number: General, Percentage, Decimals, Fractions

Format: Normal, Bad

Cells: Insert, Delete, Format, Themes

D13

	A	B	C	D	E	F	G	H	I
1	First name	Surname	ID number	Assignment: Assessment - P	Assignment: Assessment - I	Assignment: Assessment - M	Assignment: Assessment - D	Assignment: Assessment - C	Assignment: Assessment - P
2	David	Beckham	12345	Pass	Merit	Merit	Distinction	Distinction	Distinction
3	Winston	Churchill	111222	Refer	Merit	Pass	Distinction	Refer	Merit
4	Albert	Einstein	12342	Refer	Pass	Merit	Distinction	Distinction	Distinction
5	Hugh	Grant	12344	Refer	Distinction	Pass	Pass	Distinction	Pass
6	Joe	Hart	12333	Refer	Pass	Merit	Refer	Distinction	Distinction
7	David	Hockney	333222	Merit	Distinction	Pass	Merit	Merit	Merit
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									

Summary

By using the topic course format and using a topic for each unit makes tracking much easier, as the entire learner grades are available from one screen. If however you are using separate courses for units then your grades will be only available from within each course. So you will need to aggregate them from multiple spreadsheets. You may be using a third party block that helps you get round this, or maybe your Moodle has a reporting tool that helps. Custom database queries will also assist you in collating all the grades for the BTEC.

By using the methods outlined in the document you can configure Moodle to both accept and/or grade BTEC assignments. All grades, feedback and criteria can stay in Moodle. And you can publish your grades via a CSV or Excel Spreadsheet to an external system – no more copy and paste!

If you have an effective end-of-year rollover strategy in place then you can retain all the grade data for previous students for as many years as required, all within one Moodle installation.

This solution by no means turns Moodle into a complete BTEC grading/tracking platform- there are commercial tools purposefully designed for the job. It does however demonstrate that Moodle is more than capable of handling and marking assignments. Yes, there are a few manual steps involved with getting the data out, and yes, it can take time to build up your first complete course and units. But that's the same with anything you build from scratch. The large Moodle's I used to build and look after started as empty shells and over time grew into capable learning environments with BTEC support.

For me, this method worked the best. But maybe you have other methods that work for you, so why not share them with the community?

Good Luck!