COURSE NAME / CODE	BTEC National Subsidiary / Diploma / Extended Diploma in IT
UNIT(s) No / Name	42 – Spreadsheet Modelling
LEVEL	3
ASSIGNMENT NUMBER & TITLE	Assignment 1 - Discuss and compile a complex spreadsheet model

LECTURER/ASSESSOR	Sandra Taylor
ISSUE DATE	20th January 2017
DEADLINE DATE	10th February 2017
SUBMISSION DATE	
RESUBMISSION DATE**	
RESUBMISSION AUTHORISATION BY LEAD INTERNAL VERIFIER*	
AUTHORISATION DATE	

All resubmissions must be authorised by the **Lead Internal Verifier. Only **one** resubmission is possible per assignment, providing:
- The learner has met the initial deadlines set in the assignment, or ha met an agreed deadline extension
- The tutor considers that the learner will be able to provide improved evidence without further guidance
- Evidence submitted for assessment has been authenticated and accompanied by a signed and dated declaration of authenticity by the learner

Any resubmission evidence **must be submitted within 10 working days of receipt of assessment

Student declaration

I declare that this assignment is all my own work and the sources of information and material I have used (including the internet) have been fully identified and properly acknowledged as required.

STUDENT NAME	SIGNATURE

ASSESSMENT DETAILS & GRADING CRITERIA

(NB: Columns 1 &2 of the table below will be completed once the assignment has been submitted) Please note that criteria & evidence should be aimed to give the learner the maximum grade available within their qualification (i.e. A, Pass, Distinction)

Learning Aims Covered	
LO1	Understand how spreadsheets can be used to solve complex problems
LO2	Be able to develop complex spreadsheet models

GRADING CRITERIA FOR TASK		EVIDENCE	1) EVIDENCE SEEN		2) CRITERIA MET			
			Y	N	Y	I	N	IV
P1	explain how spreadsheets can be used to solve complex problems	PowerPoint presentation						
P2	develop a complex spreadsheet model to meet particular needs	Excel spreadsheet						
P3	use formulae, features and functions to process information	Excel spreadsheet						
P4	use appropriate tools to present data	Bar chart						
P5	customise the spreadsheet model to meet a given requirement	Excel spreadsheet						
M1	refine a complex spreadsheet model by changing rules and values	Excel spreadsheet and report						
M2	analyse and interpret data from a spreadsheet model	Excel report						
D1	discuss how organisations can use interpretation methods to analyse data	Report						

KEY: Y = Yes, I = Incomplete, N = No
BREAKDOWN OF HOW GRADES WILL BE AWARDED:

TYPE OF QUALIFICATION	TICK	DESCRIPTION
BTECS / WORKSKILLS	√	Pass / Merit / Distinction / Fail
A LEVELS / A2		A-U

Internal Verification of Assignment Brief

IV Full Name		**Sign**		**Date:**	
LIV Full Name		**Sign**		**Date:**	

Please note that your assignment **MUST** have the following (unless otherwise stated):

1. Cover page
2. Contents page
3. Introduction
4. Conclusion
5. Bibliography

SCENARIO

The Cutting Edge College is a large college offering a full range of academic courses, together with vocational courses such as plumbing, carpentry and so on. It also offers evening and weekend courses as part of its adult education programmes.

The administration team at The Cutting Edge College want to use spreadsheet software to keep track of student enrolments and course funding for the Year 2015.

Requirements

A Student worksheet that stores the following:

- **Student Number**
- **Student First and Last Name**
- **Student Address**
- **Student Sex (M/F)**
- **Student Status (Enrolled / Not Enrolled) -** This should be automatically set if the student exists within the enrolment sheet. It would also be useful if Enrolled is displayed in blue and not Enrolled displayed in red. (Conditional formatting)

A **filtered list** on the student worksheet is needed to allow the user to select and display specific student records.

A Course worksheet that stores the following details:

- **Course Code**
- **Course Name**
- **Course Start Date**
- **Course End Date**
- **Course Funding Cost (the cost of the course per student, usually between £150 and £1,000 – use a mix of costs)**

An Enrolment worksheet that displays the following:

- **Student Number**
  This field should be a user input field to allow a user to enter the relevant Student ID
- **Student Name**
  This should be automatically displayed by using the Student Number to find and display the student's name from the Student worksheet (VLOOKUP)
- **Student Sex**
  This should be automatically displayed by using the Student Number to find and display the student's sex from the Student worksheet (VLOOKUP)

- **Course Code**

  This field should be a user input field to allow a user to enter the relevant Course Code

- **Course Name**

  This should be automatically displayed by using the Course Code to find and display the course name from the Course worksheet (VLOOKUP)

A <mark>Funding</mark> worksheet that displays the following:

- **Course Code**

  Directly referenced from the Course worksheet

- **Course Name**

  Directly referenced from the Course worksheet

- **Course Cost**

  Directly referenced from the Course worksheet

- **Number of Attendees**

  Automatically generated using the enrolment worksheet

- **Basic Cost Funding**

  Number of attendees on the course multiplied by the Course Funding to give the total basic funding available

- **Funding Allowance** – Single cell that holds the value of £1000 which will be used for an absolute cell reference

- **Extra Funding**

  Shows the value displayed in the Funding Allowance cell if the basic funding is less than £1500 and the attendees are more than 5. Only half the amount of the Funding Allowance will be allocated to courses that have exactly 5 attendees enrolled. Courses that do not meet these conditions will receive no extra funding. (IF, AND) (Nested IF)

- **Total Funding –** The total amount of funding available (Basic Cost Funding + Extra Funding)

  Each worksheet should make use of an **input form** to allow the user to enter data into each of the sheets; you should use a **macro** and assign it to a button to display each of the forms.

  All of the worksheets should be user-friendly, with the correct use of colours, formatting, consistency and validation. You have to create the data going into the worksheets, include at least 40 student records, 20 courses and ensure that 30 students are involved within enrolments.

TASK 1 **Evidence you must produce for this task (please check marking sheet below for additional).**

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
*The Principal at the The Cutting Edge College wants to know how spreadsheets can be used to solve complex problems. He wants you to **create a PowerPoint** presentation which explains to him the **benefit of Spreadsheets**, include the following:* • *Typical users* • *Manipulating complex data to support decisions* • *Data mining.*	42	P1

• How they're used to solve complex problems i.e. cash flow forecasting, budget control, 'what if' scenarios, sales forecasting etc.		
Research the above points in more depth and **produce a report** detailing how The Cutting Edge College can use interpretation methods to analyse data i.e. comparisons of totals, trend analysis.	42	D1

TASK 2 Evidence you must produce for this task (please check marking sheet below for additional).

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
Having studied the college's requirements **create all the worksheets specified**, ensuring that it contains some of the following aspects: • multiple worksheets • cell and worksheet links • complex formulae, for example at a least two-step process • data entry forms (input form) • nested IF functions • cell protection	42	P2
Use a selection of the following formulae and functions to meet the requirements of the enrolment process: • relative references • absolute references • logical functions, for example IF, AND, OR • correct operators, • named ranges/cells • lookup functions	42	P3
Customise the spreadsheet in order to avoid data being entered incorrectly within the Course worksheet**:** • Ensure that the course start date is within the range of 01/01/15 and 01/01/16 and the end date is within the range of 01/01/15 and 01/06/16. (data validation) • Show error message if this range is not met – show and explain **all 3** potential messages available **Formatting** to include: • Embolden, italic, borders, shading, evidence of appropriate column alignment and consistency (common look and feel throughout all worksheets) should be shown. **(Evidence:** Print screens of the spreadsheets showing them with and without the formulas. These must include explanations of the choice of formulas/functions/formatting used; detailing how they have met the requirements).	42	P5

TASK 3 Evidence you must produce for this task (please check marking sheet below for additional).

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
The Principle at The Cutting Edge College is worried that the spreadsheet will not cover all their needs and that the staff may accidently delete parts of the formulae and functions by mistake. To ensure your spreadsheet is 'fit for purpose' **demonstrate** your spreadsheets functions and formulae, including cell/worksheet protection to the Principle (your lecturer).	42	M1

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
• *Use their feedback to 'refine' your spreadsheet model to improve its efficiency* *(Evidence: Print screens with changes and explanations and submit with a copy of your Demo sheet)*		

TASK 4 Evidence you must produce for this task (please check marking sheet below for additional).

To achieve the criteria you must show that you are able to:	Unit	Criterion Reference
In order to assist the Management Team at the college to present, interpret and analyse their data complete the following: • *Create and print an **excel report** to enable the number of students attending each course to be displayed. Included in the report add a function to allow the data to be filtered (your choice of data).* *(Evidence: Print report (with and without filtering option) and explain how the report was used to interpret the spreadsheet data and what you learnt from the findings.)*	42	M2
• *From the data generated in the report, create **a bar chart** (in the Enrolment worksheet) to graphically display the information with appropriate titles, axis scales and colours.* *(Evidence: Print screen of the graph and appropriate titles with explanations, including how the chart/graph met the user need)*	42	P4

Sources of information	Information Technology Practitioners – Book 2 BTEC Wiki Information and Communication Technology – R P Richards and P M Heathcote http://www.ehow.com/how-does_5244461_do-companies-use-spreadsheets_.html

P1

- [ ] PowerPoint presentation
- [ ] benefit of spreadsheets
- [ ] *Typical users*
- [ ] *Manipulating complex data to support decisions*
- [ ] *Data mining.*
- [ ] *How they're used to solve complex problems*

P2

- [ ] Excel spreadsheet printout showing some of the following:-
- [ ] *multiple worksheets*
- [ ] *cell and worksheet links*
- [ ] *complex formulae, for example at a least two-step process*
- [ ] *data entry forms (input form)*
- [ ] menu systems
- [ ] list boxes
- [ ] drop-down boxes
- [ ] event controls
- [ ] data validation
- [ ] error trapping
- [ ] lookup tables
- [ ] *nested IF functions*
- [ ] *cell protection*

P3

- [ ] Excel spreadsheet printout showing the following:-
- [ ] *relative references*
- [ ] *absolute references*
- [ ] *logical functions, for example IF, AND, OR*
- [ ] *correct operators,*
- [ ] *named ranges/cells*
- [ ] *lookup functions*

P4

- [ ] Bar chart
- [ ] appropriate titles
- [ ] axis scales
- [ ] colours
- [ ] explanations
- [ ] how the chart/graph met the user need

P5

- [ ] Excel spreadsheet printout showing
- [ ] course start date within the range of 01/01/15 and 01/01/16
- [ ] end date within the rage of 01/01/15 and 01/06/16
- [ ] error message if not in range with explaination of all error messages available
- [ ] formating (can include the following)
- [ ] hiding information
- [ ] protecting worksheets and cells
- [ ] modifying toolbars and menus
- [ ] checking data for example data validation
- [ ] range checking
- [ ] not NULL and display error messages.

M1

- [ ] Observation to lecturer
- [ ] Spreadsheet showing:-
- [ ] *functions and formulae*
- [ ] *cell/worksheet protection*
- [ ] feedback used to refine spreadsheet model
- [ ] can include from the following:-
- [ ] introducing shortcuts or other methods to aid navigation
- [ ] improving the presentation by applying different styles and formatting techniques

M2

- [ ] Excel report
- [ ] number of students attending each course
- [ ] function to allow data to be filtered
- [ ] this could be done by the following means:-
- [ ] sub-totals
- [ ] pivot tables
- [ ] data sorting and data comparison

D1

- [ ] Report
- [ ] *use interpretation methods to analyse data*