

# Assessment (non-exam) Brief



UCL  
SCHOOL OF  
MANAGEMENT

Module code/name	MSIN0066 Management Accounting for Engineers
Module leader name	Elliot Guner
Academic year	2022/23
Term	2
Assessment title	Individual Coursework MAFE
Individual/group assessment	Individual

**Submission deadlines:** Students should submit all work by the published deadline date and time. Students experiencing sudden or unexpected events beyond your control which impact your ability to complete assessed work by the set deadlines may request mitigation via the [extenuating circumstances procedure](#). Students with disabilities or ongoing, long-term conditions should explore a [Summary of Reasonable Adjustments](#).

**Return and status of marked assessments:** Students should expect to receive feedback within one calendar month of the submission deadline, as per UCL guidelines. The module team will update you if there are delays through unforeseen circumstances (e.g. ill health). All results when first published are provisional until confirmed by the Examination Board.

**Copyright Note to students:** Copyright of this assessment brief is with UCL and the module leader(s) named above. If this brief draws upon work by third parties (e.g. Case Study publishers) such third parties also hold copyright. It must not be copied, reproduced, transferred, distributed, leased, licensed or shared any other individual(s) and/or organisations, including web-based organisations, without permission of the copyright holder(s) at any point in time.

**Academic Misconduct:** Academic Misconduct is defined as any action or attempted action that may result in a student obtaining an unfair academic advantage. **Academic misconduct includes plagiarism, obtaining help from/sharing work with others be they individuals and/or organisations or any other form of cheating.** Refer to [Academic Manual Chapter 6, Section 9: Student Academic Misconduct Procedure - 9.2 Definitions](#).

**Referencing:** You must reference and provide full citation for ALL sources used, including articles, text books, lecture slides and module materials. This includes any direct quotes and paraphrased text. If in doubt, reference it. If you need further guidance on referencing please see [UCL's referencing tutorial for students](#). Failure to cite references correctly may result in your work being referred to the Academic Misconduct Panel.

## Content of this assessment brief

Section	Content
A	Core information
B	Coursework brief and requirements
C	Module learning outcomes covered in this assessment
D	Groupwork instructions (if applicable)
E	How your work is assessed
F	Additional information

## Section A: Core information

<b>Submission date</b>	17/02/2023
<b>Submission time</b>	10am UK time
<b>Assessment is marked out of:</b>	90
<b>% weighting of this assessment within total module mark</b>	25%
<b>Maximum word count/page length/duration</b>	6-page limit. One document must be submitted (word or pdf). Question 1 and 2 are calculation based (words are not expected for Q1 & Q2). These calculations in Question 1 and 2 should be inserted/copy and pasted into your submission document as an image. Question 3 and 4 are essay based, and each have a 500 word maximum limit. Please address each question as 1), 2), 3), 4). As a formatting guide, please use a standard font (Arial, Calibri, Times New Roman), and a standard font size of 12.
<b>Footnotes, appendices, tables, figures, diagrams, charts included in/excluded from word count/page length?</b>	Footnotes, appendices and tables are Included in word count / page limit. Diagrams/charts are excluded from word count.
<b>Bibliographies, reference lists included in/excluded from word count/page length?</b>	Excluded. It isn't expected to include sources, however if you do please reference accordingly as per Section E (below)
<b>Penalty for exceeding word count/page length</b>	Penalty for exceeding word count will be a deduction of 10 percentage points, capped at 40% for Levels 4,5, 6, and 50% for Level 7) Refer to Academic Manual Section 3: Module Assessment - 3.13 Word Counts.
<b>Penalty for late submission</b>	Standard UCL penalties apply. Students should refer to <a href="https://www.ucl.ac.uk/academic-manual/chapters/chapter-4-assessment-framework-taught-programmes/section-3-module-assessment#3.12">https://www.ucl.ac.uk/academic-manual/chapters/chapter-4-assessment-framework-taught-programmes/section-3-module-assessment#3.12</a>
<b>Submitting your assessment</b>	The assignment MUST be submitted to the module submission link located within this module's Moodle 'Assessment' tab by the specified deadline.
<b>Anonymity of identity. Normally, <u>all</u> submissions are anonymous unless the nature of the submission is such that anonymity is not appropriate, illustratively as in presentations or where minutes of group meetings are required as part of a group work submission</b>	The nature of this assessment is such that anonymity is required.



## Section B: Assessment Brief and Requirements

*ChipBit* had a recent breakthrough and managed to successfully integrate health tracking microchips into humans, under the skin. The CEO Alyssa announced “A dream come true. After all these years only selling one product, our beloved and popular wearable tracking watch TRAKK, I am proud to drive this industry inside the body from now on with a brand-new microchip”. This new microchip named LISTEN requires a ten-minute simple intervention with an approved *ChipBit* nurse to fix under the skin of the lower back. All LISTEN microchips are packaged and sold as a pair of 2 identical components per unit of LISTEN.

For their first year of operation (Year 1), the direct manufacturing labour cost was budgeted to be £50 per hour and they would incur 120,000 machine hours for the estimated production. *ChipBit* adopted a traditional absorption costing method. It used a simple manufacturing cost structure, consisting of direct materials, direct manufacturing labour, and indirect costs. The indirect costs were absorbed using a single volume basis (unit of output rate). As this is the first microchip to be implanted under the skin, *ChipBit* spent a considerable amount of time and resources on quality control. Furthermore, due to the intensity of the nurse interventions, *ChipBit* nurses were required to work as a team, making sure that each nurse was getting sufficient breaks throughout their shifts to ensure the right level of service. This caused delays in initial Year 1 projections, but these were necessary to meet the very demanding quality control requirements. During their end of year annual board meeting, Alyssa was heard shouting at the newly appointed management accountant Patrice: “Don’t tell me how to run my company! The absorption costing method has always worked well as I implemented it myself when we started the company... There is no time or money to change accounting systems. Don’t you understand I have very demanding shareholders who require we keep profits high?!”. After her outburst, the meeting continued in an excited tone with Alyssa marvelling at the slightly above expected sales of LISTEN and a discussion of plans to expand their component range.

In the 2nd year of operations (Year 2), *ChipBit* decided to expand by including two additional microchips: FEEL and SIXSENSE - also packaged in 2 components per unit sold. During the end of year 2 meeting, Alyssa commended everyone for such remarkable growth across the three microchips and did not see a reason to change her opinion on the Year 1 management accounting costing methods, snapping to Patrice “Don’t fix it if it isn’t broken. When the dust will settle for Year 2, you will see how our profits are consistent with our costing and pricing strategy.” For Year 2, *ChipBit* used the same direct manufacturing labour as Year 1 to build each component, though Alyssa decided to increase their hourly wage by 20% to reward them for their work and the success of the company. Furthermore, the Year 2 average delivery cost per sales order (i.e. per unit sold) was calculated as £25 (LISTEN), £40 (FEEL) and £60 (SIXSENSE). To determine their selling price, *ChipBit* charged a profit loading of 10% to the full cost for LISTEN and FEEL, and 15% for SIXSENSE. In Year 2, there were sales orders for 8,000 units of LISTEN, 4,000 units of FEEL and 14,000 units for SIXSENSE. Given this data, the sales objectives for Year 3 were also revisited in this end of year 2 meeting. Alyssa instructed her sales manager to reduce focus from LISTEN and further increase sales of SIXSENSE, in the hope to help maximise the profit of the company.

FEEL and SIXSENSE varied from LISTEN in several ways:

- They require higher priced silicon wafer.
- The production of FEEL and SIXSENSE involves a higher direct manufacturing labour time to LISTEN.
- These new components demand a more complex manufacturing process.

Table 1 - Year 2 data per component

	LISTEN	FEEL	SIXSENSE
Machine Hours	20	35	50
Direct Materials	75	100	110
Labour Hours	0.25	0.50	1.25

As with any disruptive innovation, customers have been divided in adopting the microchips. Though the measurements are accurate which helps to reduce the time spent diagnosing certain health conditions, there have been reports of problems. SIXSENSE for example involves a more intrusive intervention from the nurse, with 40 in 1,000 patients reporting discomfort and requiring up to 6 visits to fix the microchip in place.

It was not the first time that Patrice was shot down for suggesting updating the accounting systems. *ChipBit* was a leading tech company and attracted some of the brightest individuals in the world, however Alyssa was difficult to work for. It is in part due to her reputation of a genius, as some newspapers proclaim, that investors keep injecting money into her inventions. She would regularly dismiss Patrice and other colleagues who didn't agree with her ideas. Patrice however, believed that using absorption costing did not reflect what was really going on with the microchip range. Additionally, there were doubts if some of the material costs were variable or fixed. During the last month of Y2, Patrice spent three full weekends investigating if an ABC system would be more appropriate, quickly categorising the overhead cost pool into five activity areas and cost drivers. The results of this initial investigation, based on Year 2 data, are summarised below in Table 2:

Table 2

Activity	Cost Driver
Moulding	Number of machine hours
Quality Control	Number of labour hours
Installation	Number of sales orders
Delivery	Cost for delivering a sales order £
Finance, admin and other	Number of sales orders

It was also identified that the total budgeted overheads for Year 2 was made up of the following (Table 3):

Table 3

Activity	Total Overhead Cost (£000s)
Moulding	2,000
Quality Control	9,976
Installation	988
Delivery	1,200
Finance, admin and other	1,482

### Required

1. Using the original traditional absorption costing system, complete the following:
  - Calculate the unit profit and price for each LISTEN, FEEL and SIXSENSE for Year 2.Show your workings clearly and present your answers to 2 decimal places.  
**(15 marks)**

**Note:** within the 15 marks available, 3 marks are allocated for 'correct figure only' unit prices, based on 1 mark for each LISTEN, FEEL and SIXSENSE.

2. Using the activity-based costing (ABC) system, complete the following:
  - Calculate each relevant cost driver rate, clearly showing your workings.
  - Calculate the unit profit and price for each LISTEN, FEEL and SIXSENSE for Year 2.Show your workings clearly and present your answers to 2 decimal places.  
**(25 marks)**

**Note:** within the 20 marks available, 3 marks are allocated for correct figure only unit prices, based on 1 mark for each LISTEN, FEEL and SIXSENSE.

3. Prepare a commentary which provides insights to the use of activity-based costing in the scenario above. In so doing, assess and comment on any differences in unit costs and profits arising from your calculations in Requirements 1 and 2 immediately above and identify the issues and challenges facing *ChipBit*. Maximum word count: 500 words total  
**(20 marks)**
4. How and to what degree the application of ABC to the scenario could or could not benefit *ChipBit's* management team in the context of strategic development. Judge whether *ChipBit's* circumstances could be suitable for successful implementation of ABC. Offer at least 3 different key process or production improvements that could help the company further. Maximum word count: 500 words total  
**(20 marks)**

**Note 1:** In addition to the 40 marks available for Requirement 3) and Requirement 4) above, there is a sub-allocation of 10 marks reflecting academic judgement applied by the marker/assessor, based on the marker/assessor's perception of logic, rationale, thrust, and communication. The composition of each set of 10 marks is: 10 marks = faultless; 9 marks = outstanding; 8 marks = excellent; 7 marks = very good; 6 marks = good throughout the answer; 5 marks = some merit/goes in the right direction; 4 marks = acceptable but needs improvement; 3 marks = lacking in conviction; 2 marks = some limited merit but inadequate in many places; 1 mark = inadequate in too many places.



## Section C: Module Learning Outcomes covered in this Assessment

This assessment contributes towards the achievement of the following stated module Learning Outcomes as highlighted below:

- Understand the roles of profit, cash and 'cost' in decision making.
- Identify issues in overhead cost recovery and evaluate their impacts on both cost reporting and decision making.



## Section D: Groupwork Instructions (where relevant/appropriate)

Specific requirements for groupwork are available here. If this section is blank, no specific requirements for groupwork are applicable to this assessment.

## Section E: How your work is assessed

Within each section of this assessment you may be assessed on the following aspects, as applicable and appropriate to this assessment, and should thus consider these aspects when fulfilling the requirements of each section:

- The accuracy of any calculations required.
- The strengths and quality of your overall analysis and evaluation;
- Appropriate use of relevant theoretical models, concepts and frameworks;
- The rationale and evidence that you provide in support of your arguments;
- The credibility and viability of the evidenced conclusions/recommendations/plans of action you put forward;
- Structure and coherence of your considerations and reports;
- Appropriate and relevant use of, as and where relevant and appropriate, real world examples, academic materials and referenced sources. Any references should use either the Harvard OR Vancouver referencing system (see [References, Citations and Avoiding Plagiarism](#))
- Academic judgement regarding the blend of scope, thrust and communication of ideas, contentions, evidence, knowledge, arguments, conclusions.
- Each assessment requirement(s) has allocated marks/weightings.

Student submissions are reviewed/scrutinised by an internal assessor and are available to an External Examiner for further review/scrutiny before consideration by the relevant Examination Board.

It is not uncommon for some students to feel that their submissions deserve higher marks (irrespective of whether they actually deserve higher marks). To help you assess the relative strengths and weaknesses of your submission please refer to UCL Assessment Criteria Guidelines, located at [https://www.ucl.ac.uk/teaching-learning/sites/teaching-learning/files/migrated-files/UCL\\_Assessment\\_Criteria\\_Guide.pdf](https://www.ucl.ac.uk/teaching-learning/sites/teaching-learning/files/migrated-files/UCL_Assessment_Criteria_Guide.pdf)

The above is an important link as it specifies the criteria for attaining 85% +, 70% to 84%, 60% to 69%, 50% to 59%, 40% to 49%, below 40%.

You are strongly advised to **not** compare your mark with marks of other submissions from your student colleagues. Each submission has its own range of characteristics which differ from others in terms of breadth, scope, depth, insights, and subtleties and nuances. On the surface one submission may appear to be similar to another but invariably, digging beneath the surface reveals a range of differing characteristics.

Students who wish to request a review of a decision made by the Board of Examiners should refer to the [UCL Academic Appeals Procedure](#), taking note of the [acceptable grounds](#) for such appeals.

Note that the purpose of this procedure is not to dispute academic judgement – it is to ensure correct application of UCL's regulations and procedures. The appeals process is evidence-based and circumstances must be supported by independent evidence.

## Section F: Additional information from module leader (as appropriate)

Where calculations apply, full marks available will be awarded for the correct calculations and figures,