THE UNIVERSITY OF TECHNOLOGY, SYDNEY
FACULTY OF ENGINEERING

48240 DESIGN AND INNOVATION FUNDAMENTALS

C1 DESIGN BRIEF COVER SHEET

TUTOR: _____ **GROUP NAME:** _____

SEMESTER: AUTUMN **YEAR: 2013**

PROJECT TITLE:		
NAMES OF GROUP MEMBERS	**STUDENT IDs**	**ROLE**
		❶
		❷
		❸
		❹

Checklist - students to complete				
Turnitin Score (%)				
Report Content Checklist has been completed	☐		Assignment Contract Attached (Mandatory) 10% penalty applies	☐
The report is securely bound (either staples, glue, comb or spiral binding)	☐		Minutes of Meetings Attached (for Evidence of Team Meetings)	☐
We may refuse to mark a report with a high Turnitin Score – resubmission may accrue late penalties				

Certification

I certify that this report is entirely my own work*, except where I have given fully documented references to the work of others, and that the material in this report has not previously been submitted for assessment by me or any other person in any formal course of study.

Signed: _____ **Date:** _____

Signed: _____ **Date:** _____

Signed: _____ **Date:** _____

Signed: _____ **Date:** _____

Each student must SIGN this cover sheet to certify that this report is entirely their own work.
If your signature is missing you will not receive your marks for this assignment.

*Students submissions MUST be the original work of their group for this semester. You are NOT to re-use the work of other students from earlier semesters. You are also NOT to copy or re-use any material you or any of your group members have submitted as an assignment or report in previous semesters in this subject or any other subject. To avoid plagiarism, reports must be in your own words, except for direct quotations. All source material (including ideas, diagrams, etc.) should be explicitly acknowledged.

Report Content Check List

- TICK the criteria that you feel you have met before handing in your report

☐ The report is written with its intended *objectives* and *readership* in mind at all times. Hence the report can be read *standalone*, and it should be comprehensible to someone less versed in the subject.

☐ The report is *concise* ("brief but comprehensive in expression" Concise Oxford English Dictionary definition).

☐ **The report is securely bound – three staples on left hand edge, or comb binding, or glue binding or spiral binding (penalty applies for non-compliance)**.
Our *names, group name,* the *project title* etc are clearly visible without opening the folder.
The individual pages are NOT inserted into plastic sheet protectors.

☐ The report is printed on A4 paper. Pages are consecutively numbered, starting with the title page.

☐ This *coversheet marking guide* appears as the first six pages visible on opening the folder. Following these cover pages is a *title page*, which includes our names (surnames first and underlined) and student IDs, the report title and Group number.

☐ The report contains a *table of contents* with page numbers.

☐ The body of the report is divided into numbered and appropriately titled *sections*.

☐ A list of references and the appendices follow the summary, recommendation or conclusion.

☐ *Equations, tables, graphs, diagrams,* etc. are numbered and/or titled for referencing.

☐ Sources from which any such items are derived are acknowledged in the text and included in the reference list.

☐ *References* are in either of IEEE or Harvard styles and have been correctly acknowledged in the text wherever we have made use of them. **Each entry in the reference list is explicitly referenced** at least once from the main body of the text.

☐ All direct quotations are in "quotation marks", and we have not made use of someone else's work without citing it, including technical data, diagrams, etc.

☐ We have paid attention to *spelling, punctuation, grammar* and *choice of words* in this report. *Acronyms* and *jargon* are used only if there is good reason, and have been clearly explained at their first appearance in the report.

☐ The report has been carefully *proof-read*. Spelling and grammar have been independently checked, e.g., using computer spell checkers and independent readers.

☐ The report is no longer than the specified page limit.

☐ Individual student's main contributions to each section of the report os listed in the Student Roles section of the marking sheet (P = Prime, C = Contributed, R = Reviewed or blank).

☐ [To the marker] Please take into account the following additional features or special circumstances when marking our report [explanation follows]:

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48240 Design Fundamentals – AUTUMN 2013
Marking Guide – Design Brief (C1)

Instructions given to students – from the Detailed Subject Guide

Deliverable: C1 Design Brief:
The Design Brief describes an optimised solution design, an accurate forecast of the further design and development required for full production, and a detailed cost analysis of the total design effort, production setup, production run and wholesale distribution costs. Your product business plan will determine the sales volume required to breakeven by the end of year 2 and the ability for JAG to achieve this wholesale target.

The Design Brief is prepared for management and highlights the features of your design. The scope of the design brief is the "production ready" product. This includes design detail sufficient to manufacture the product and the estimated fixed and variable cost of production of the first batch of products. The report should generally be written in non-technical language as it is mainly directed towards management decision makers. C1 must be handed in at the start of the specified tutorial.

The Design Brief C1 shall contain a One Page Summary (**max 200 words**), the Design Brief (**no more than 10 pages for the body of the report)** and Engineering Drawings should be included as an appendix, limited to 6 drawings. The 10 page limit does not include your title page, the One Page Summary, the engineering drawings and the compulsory provided coversheets. The markers will ignore any material that exceeds these limits. For readability, the body text of all reports shall be 12pt. The top and bottom margins should be 2.5 cm while the left and right margins should be 3 cm.

Your Design brief should be a stand-alone document that only provides the information that is most relevant and critical to the management. That is, with the information provided in your Design Brief, the management shall be able to decide whether to invest in the project. ***It will take a good deal of work and multiple revisions to produce a quality report that provides all the required information within the 10 page limit. Ensure that your group schedules adequate time to prepare your report.***

Keep in mind that only a small proportion of projects may turn out to be financially viable and so it is more important to be honest than to have an apparently successful product. You will not lose marks for a project that turns out to be financially unviable, provided your report explains what the costs or risks would be incurred if management went ahead with the project.

The Design Brief will also be assessed on a *group* basis, with marks being distributed in accordance with the third self and peer assessment exercise. Hence, only ***one*** report per group is required to be submitted. The report will be marked on both presentation and content.

Suitable major headings for the final report **should be** the following :

Title Page
One Page Summary (**max 200 words**)

Design Brief (10 page limit)

1. **Introduction**
2. **Product Overview** including a Description and Market Potential

   This section should clearly answer the question "Is the Business Opportunity Real?"

   Include a brief description of your product, including how it meets the specified scenario requirements. ("Is the Product Real?")

   You should briefly describe your market, its size and the percentage you hope to capture. You should then emphasis the design's *Market potential* and list your products features that you believe should be brought to the attention of the marketing department; include any features that will encourage people to purchase your product rather than a rival product. ("Is the Market Real?")

3. **Product Design Features**

   Details describing the product design and how this has been optimised for efficient and effective Manufacture, Assembly, Maintainability, Safety, Useability etc. Describe any design iterations and rejected design options as evidence of your design optimisation.

4. **Product Business Plan**

   The Business Plan should briefly describe the cost of further product development to be ready for production, Production Line setup, Training, Manufacturing Cost, Wholesale Selling Price and Breakeven analysis.

   This section should clearly answer the business questions "What would it take to win this Opportunity?" and "What is this Opportunity worth to the Business?"

   Your business plan should include:

   (a) The ***development budget*** required to develop the proposed solution into a detailed production ready design.

   (b) A ***breakeven analysis*** for the estimated lifetime of the product. The *breakeven analysis* should include all costs associated with the product, i.e., development, manufacturing, and wholesale distribution costs including overheads and all revenue from wholesale product sales. This *breakeven analysis* will estimate the sales volume for the product's viability and sensitivity to fixed / variable costs and price.

   (c) An assessment of the ability for JAG to achieve the breakeven wholesale quantity by Year 2.

5. **Conclusion**

   Your conclusion may also reiterate the recommendations you made in the report. Remember it is business management who will make the final decision as to whether to proceed with your product.

6. **References**

Appendices (additional pages)

1. ***Drawings*** of sufficient detail to enable your product to be manufactured. These drawings should include all dimensions. Maximum 6 Drawings

48240 Design Fundamentals **C1 Marking Sheet** **SPRING 2012**

Group Number: _____ Tutor: _____

Design Brief – C1	**Student Role:** **P = P**rime (eg. author) **C = C**ontributed **R = Re**viewed				**Grade and comments:** Z = Unsatisfactory P(-) = Below Satisfactory P = Satisfactory P(+) = Above Satisfactory C = Good Quality D = Superior Quality HD = Outstanding Quality
Student:	❶	❷	❸	❹	
One Page Summary, Introduction, Product Overview, Conclusion (Weight 0.1)					
The scope of the design brief is the "production ready" product					
The design brief has been written for a management and not an engineering readership. It is a stand-alone document that only provides the information that is most relevant and critical to the management.					
The One Page Summary is a stand-alone component and includes all of the most relevant information					
The report is *concise* and *free* of grammar and spelling mistakes. The report complies with the Coversheet Checklist.					
The design brief includes a brief description of your product and a realistic appraisal of the product's market prospects, including expected sales volume.					
The conclusion recommends management action in accordance with the detail presented in the report					
Product Design Features (Weight 0.3)					
The design brief clearly articulates the features of your product that will make it marketable – includes product features that will encourage people to purchase your product rather than a rival product					
The design brief clearly describes how your product will meet the need outlined in the project scenario					
The design brief clearly describes how your product has been designed for manufacture, assembly, maintainability, safety, etc					
The design brief describes the optimisation of the design (design options, choices, iterations and/or rejected design)					
The design detail is sufficient to manufacture the product					
Business Plan (Weight 0.25)					
The design brief includes the costs (budget) required to develop a production prototype and the estimated fixed and variable cost of production of the first batch of products.					
The design brief includes a breakeven analysis for the expected lifetime of the product and includes the development costs, manufacturing costs and wholesale distribution costs including overheads and all revenue from wholesale product sales.					
The breakeven analysis is used to estimate the sales volume for the product's viability and sensitivity to fixed / variable costs and price. The report assesses the ability for JAG to the breakeven wholesale quantity by Year 2.					

Drawings (Weight 0.25)						
The Engineering Drawings can be independently interpreted to allow product manufacture.						
The Engineering drawings clearly show all dimensions (sizes, hole diameters etc)						
The Assignment Contract shows the task breakdown and work planning. The minutes of the team meeting show team working and tracking of timeliness and quality of the deliverables. Time is allocated to group review and editing of the final report. (Weight=0.1)						
Violation of submission guidelines and for not following Report Content Checklist, that is, loss of mark for: Late submission (-10% per day late), Report format (pages over the limit not marked), Coversheet detail incomplete, Turnitin score missing or Student PCR Roles missing or not done properly (-5% max) Assignment Contract missing or incomplete (-10%) Report binding (-5% for non-conformity). *Note: deduction is taken off the available marks.*	Reason for Deduction:					
BONUS MARKS* (Max. 1) Given for:						
DESIGN BRIEF MARK (Maximum 10 + possible bonus marks)						

Comments:

*Bonus marks may be given (up to the value of 1) for component of report that is clearly outstanding (Distinction grade or higher).

The items listed in this marking guide are only provided as a guide to help you prepare your report to meet the project requirements. They may not represent a complete list of all the material required within each section of your report. Conversely, the listing of a category does not necessarily mean that it is required in your report.
This report will be marked on both *presentation* and *content*. You should re-read the *lecture notes and* refer to the initial project handout for guidelines about what should be in your report and how it should be prepared.