Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

colegsirgâr

APPENDIX GA36a

LEVEL 4 ASSESSMENT SPECIFICATION

Student name:		**Student ID number:**	
Programme:	HNC Electrical and Electronic Engineering		
Module:	HNC Electrical and Electronic Engineering Project		
Module code:	SGEE4006	**Contribution to Overall Module Assessment (%):**	75%
Lecturer:	Robert Jenkins	**Internal Verifier:**	Mike Hall
Assignment Title:	Final Report and Log Book	**Word count (or equivalent):**	3750
Submission deadline:		**Return date of provisional marks & written feedback:**	
Submission method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) **Alternative submission method (if applicable):** **Late submission of the assessment will result in a late penalty mark.** Penalties for late submission: Up to one week late, maximum mark of 40%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.		
Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

Module Learning Outcomes
(from module syllabus)

1. Define an engineering problem, research and select a solution, plan and organise its implementation within time and budgetary constraints with consideration of environmental and sustainability constraints, ethical, health and safety, security and risk issues, and standards and codes of practice.
2. Implement, with limited supervision, a project design solution ensuring its fitness for purpose including operation, maintenance and reliability, managing the design process including costs evaluating the outcome in comparison with the specification.
3. Communicate the project aims, design solution and plans, and to write a formal report evaluating the project outcomes.

TASK DESCRIPTION

Aims and Objectives

To provide you with the experience of carrying out a practical investigation, demonstrating planning, organisation and practical skills, working within health and safety guidelines and other constraints and communicating their work effectively.

Assignment Tasks

Task 1 – Full report

A report must be written based on sections 1 to 10 below. The actual structure of the report is provided on the next page. Keep an overall word count and limit it to 3750 words. A log-book must be compiled for the duration of the project.

1 - Introduction and Background Research

Write an introduction to the project for the reader to understand its context. Explain the reason for the project and describe the problem to be solved. Provide clear evidence of background reading and research into all aspects of the project. Use Harvard referencing for all sources cited. Any material directly taken must be included in double quotation marks and referenced. All material written in your own words but based on other sources must also be referenced.

2 – Specification

Write a clear description of the project specification giving a detailed list of all the project outcomes i.e. what it must achieve. Include time and budgetary constraints. Explain the customer or user needs, expected operation, maintenance and reliability requirements with due consideration of health and safety risks, environmental protection and sustainability issues.

3 – Planning

Provide a detailed Gantt chart showing the timing of the project from beginning to end, that includes expected and actual times running in parallel so that comparisons can be made of the effectiveness of the plan. A testing plan must also be provided that lists all the requirements of the specification and expected outcomes. Explain your plans and refer to the Gantt chart and testing table by figure number.

4 – Solutions Considered

Provide an outline of each of the solutions considered (there should be at least two, preferably three) while seeking to solve the problem set out in the specification. Note that each solution should be able to meet the specification requirements. Analyse and evaluate each method in terms of cost, efficiency, reliability etc., and justify the choice of your final solutions.

5 - Final Solution and Implementation

Provide a full explanation of the final project solution including detailed designs and costs. Note that the developmental stages and prototypes will be found in the log book. Photographic evidence must also be provided of the final constructed system or product and installation if appropriate. Explain the operation and maintenance requirements and the steps taken to ensure environmental protection and sustainability.

6 - Testing and Results

The testing plan from task 3 must be revisited with the inclusion of test results and must be supported by photos, data tables, graphs or any other appropriate evidence. This task will form the basis of the next task and must be detailed enough to allow the project outcomes to be assessed.

7 - Discussion, Conclusions and Recommendations

Discuss the project test results in relation to all parts of the specification laid out in task 3. Make relevant conclusions as to whether the project outcomes have been met and comment on the overall success level of the project. Include your considerations of whether the project's overall outcome makes it 'fit for purpose' (operation, maintenance and reliability). Consider whether the project has met the time and budgetary constraints and if it has been successful with regards to environmental protection and requirements of sustainability. Explain how you have demonstrated high levels of professional and ethical conduct throughout the project.

8 – Reference list and Bibliography

Use the Harvard method to list all sources cited in the report. For each entry there must be one or more references in the main body of the report. Failure to do this is considered to be plagiarism. Provide a list of sources read but not quoted or reference and place in the bibliography list using the Harvard method.

9 – Appendix

Include in this section of the report material such as schematic drawings, program printouts, photographs of construction and testing evidence and any relevant datasheet pages.

Task 2 – Log Book

10 – Log Book

The log book used and developed throughout the project must show around 120 hours of work. Each log entry must be numbered, dated, signed by your tutor and industrial supervisor (if appropriate) and bound as a separate document using comb binding with a front title page and a contents page. The contents page must contain a summary table of each log entry showing date, time spent, accumulated time and a one line summary of activity.

GUIDANCE FOR STUDENTS IN THE COMPLETION OF TASKS

You are required to present an electronic report containing detailed observational notes of your work. This report must written with a maximum of 3750 words and should be laid out in the following sections preceded by a title page, acknowledgements, table of contents and list of figures:-

Summary
Acknowledgements
Contents page
List of figures
1. **Introduction and background research**
2. **Specification**
3. **Planning**
4. **Solutions considered**
5. **Final solution design and implementation**
6. **Testing and results**
7. **Discussion, Conclusions and Recommendations**
8. **Reference list and Bibliography**
9. **Appendix**
10. **Communication**

Your title page for the report should contain the following information:

Course:	HNC Electrical and Electronic Engineering
Module:	SGEE4006 Engineering Project
Assignment:	Final Report and Log Book
Name:	????? ?????
University number:	XXXXXXX
Date submitted:	DD/MM/YYYY
Word count:	?????

Further guidance:

- Do not use a styled document (template) and don't add your company logo.
- Do not include photographs of course notes or formative classroom work.
- All pages and figures must be numbered and listed in the Table of Contents and List of Figures.
- There is no need to include whole datasheets; simply cite their source or include a "snip" of the relevant information.
- Write all sections in the third person.
- Note which sections of your report have been identified above as places where the marks will be awarded and use your word allocation wisely.
- Save your report as a .pdf with your university number as the file name. All program printouts can be appended to the report by also converting to a pdf file and by using the college's software combine facility before uploading the final pdf version to TurnIt-In.
- The TurnIt-In rubric will be used to record your marks and provide you with tutor feedback.

Going Over the Word Limit

If you are found to have exceeded the specified word limit for an assessment, your work may be subject to a penalty:

- Under length - No penalty, but your work is probably missing key information
- Up to 10% over length - No deduction off final mark
- 11% or more over length - Deduction of 5 marks off final mark (but cannot reduce mark below 40%)

To measure the word count, DO NOT use Turnit-In and do not include the following:

- Assignment brief
- Index, Table of Contents and Table of Figures
- Executive Summary
- Formula and calculations (use MSEquation or text boxes to contain these)
- Reference list or bibliography
- Appendices used for: large results tables, computer code listings, data sheet extracts and any other 3rd party information

Spot checking of declared word counts will be carried out by your lecturer and second marker.

NOTE: The guidance offered below is linked to the five generic assessment criteria overleaf.

1. **Engagement with Literature Skills**

Your work must be informed and supported by scholarly material that is *relevant* to and *focused* on the task(s) set. You should provide evidence that you have accessed an appropriate *range* of sources, which may be academic, governmental and industrial; these sources may include academic journal articles, textbooks, current news articles, organisational documents, and websites. You should consider the *credibility* of your sources; academic journals are normally highly credible sources while websites require careful consideration/selection and should be used sparingly. Any sources you use should be current and up-to-date, mostly published within the last five years or so, though seminal/important works in the field may be older. You must provide *evidence* of your research/own reading throughout your work, using a suitable referencing system, including in-text citations in the main body of your work and a reference list at the end of your work.

Guidance specific to this assessment: *This will be assessed by your research and use of credible sources (Sections 1 and 8).*

2. **Knowledge and Understanding Skills**

At level 4, you should be able to demonstrate knowledge of the underlying concepts and principles associated with your area(s) of study. *Knowledge* relates to the facts, information and skills you have acquired through your learning. You demonstrate your *understanding* by interpreting the meaning of the facts and information (knowledge). This means that you need to select and include in your work the concepts, techniques, models, theories, etc. appropriate to the task(s) set. You should be able to explain the theories, concepts, etc. to show your understanding. Your mark/grade will also depend upon the *extent* to which you demonstrate your knowledge and understanding.

Guidance specific to this assessment: *This will be assessed by your descriptions and explanations (Sections 2, and 4).*

3. Cognitive and Intellectual Skills

You should be able to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of your subject(s) of study. You should be able to evaluate the appropriateness of different approaches to solving problems related to your area(s) of study and/or work. Your work must contain evidence of logical, analytical thinking. For example, to examine and break information down into parts, make inferences, compile, compare and contrast information. This means not just describing what! But also justifying: Why? How? When? Who? Where? At what cost? You should provide justification for your arguments and judgements using evidence that you have reflected upon the ideas of others within the subject area and that you are able to make sound judgements and arguments using data and concepts. Where relevant, alternative solutions and recommendations may be proposed.

Guidance specific to this assessment: *This will be assessed by the explanation of your system testing, evaluations, discussions, conclusions and recommendations. (Sections 6 and 7).*

4. Practical Skills

At level 4, you should be able to apply the basic underlying concepts and principles to evaluate and interpret these within the context of your area of study. You should be able to demonstrate how the subject-related concepts and ideas relate to real world situations and/or a particular context. How do they work in practice? You will deploy models, methods, techniques, and/or theories, in that context, to assess current situations, perhaps to formulate plans or solutions to solve problems, or to create artefacts. This is likely to involve, for instance, the use of real world artefacts, examples and cases, the application of a model within an organisation and/or benchmarking one theory or organisation against others based on stated criteria.

Guidance specific to this assessment: *This will be assessed by the quality of the results of your system testing and design adaptions. (Sections 3, 4 and 5).*

5. Transferable Skills for Life and Professional Practice

Your work must provide evidence of the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility. This includes demonstrating: that you can communicate the results of your study/work accurately and reliably, and with structured and coherent arguments; that you can initiate and complete tasks and procedures, whether individually and/or collaboratively; fluency of expression; clarity and effectiveness in presentation and organisation. Work should be coherent and well-structured in presentation and organisation.

Guidance specific to this assessment: *This will be assessed by the written and presentational quality of your report including page numbering, figure quality, figure numbering and listing, writing style, punctuation, grammar and spelling. (All sections).*

Achieving the PLOs for IET/IEng accreditation

The following PLOs have been targeting to be satisfied or partially satisfied by this assignment. Details are given below. The marking scheme on the next page will also be used to record your PLO achievements and comments will be found in the Turnit-in rubric.

D1i - Be aware of business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics.
This will be partially satisfied in section 2 of the report.

D2i - Define the problem, identifying any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards.
This will be partially satisfied by section 2 and 5 of the report.

D3i - Work with information that may be incomplete or uncertain and be aware that this may affect the design.
This will be satisfied by sections 2, 4 and 5 of the report.

D4i - Apply problem-solving skills, technical knowledge and understanding to create or adapt design solutions that are fit for purpose including operation, maintenance, reliability etc.
This will satisfied by your design adaption and explanation of maintenance and reliability including recommendation implemented in sections 4, 5 and 6 of the report.

D5i - Write a formal report evaluating the project outcome. Manage the design process, including cost drivers, and evaluate outcomes.
This will be partially satisfied in sections 4 and 5 of the report.

D6i - Communicate their work to technical and non-technical audiences.
This is partially satisfied by the whole report.

EP2i - Demonstrate an understanding of and ability to use relevant materials, equipment, tools, processes, or products.
This will be satisfied in sections 5 and 6 of the report.

EP3i - Demonstrate knowledge and understanding of workshop and laboratory practice.
This will be satisfied in sections 5 and 6 of the report.

EP4i - Demonstrate the ability to use and apply information from technical literature.
This will be satisfied in sections 2 through 6 of the report.

EP5i - Demonstrate the ability to use appropriate codes of practice and industry standards.
This will be partially satisfied throughout the report.

ET6i - Awareness of risk issues, including health & safety, environmental and commercial risk.
This will be satisfied by your investigations into the health and safety issues of the system including the environmental and commercial risks in sections 2 and 3 of the report.

STUDENT FEEDBACK FORM

This section details the *extent* to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Generic Assessment Criteria	**Marks available**
1. Engagement with Literature Skills	
Section 1 : Extent, relevance of research and credibility of sources - (/10) Sections 1 and 8: Use of Harvard for citing and listing sources – (/10)	20
2. Knowledge and Understanding Skills	
Section 2: Specification (/10) Section 4: Solutions considered (/10)	20
3. Cognitive and Intellectual Skills	
Section 6: Testing and results(/10) Section 7: Conclusions and Recommendation (/10)	20
4. Practical Application Skills	
Section 3: Planning (/5) Section 4: Solutions considered (/10) Section 5: Implementation (/10)	25
5. Transferable Skills for Life and Professional Practice	
All Sections: Quality of the report – (/15)	15

Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	**Late Submission Penalties (tick if appropriate)**		**%**
	Up to 1 week late (40% Max)		
	Over 1 week late (0%)		

GENERIC ASSESSMENT CRITERIA

Level 4

In accordance with the Framework for Higher Education Qualifications, at the end of Level 4 students will be expected to have demonstrated knowledge of the basic underlying concepts and principles of a subject, and an ability to evaluate and interpret these within the context of that area of study. They should be able to present, evaluate and interpret qualitative and quantitative data in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of their subject(s) of study. They will have learned how to evaluate different approaches to solving problems, and will be able to communicate the results of their study/work accurately and reliably, and with structured and coherent arguments. They will be able to undertake further training and develop new skills within a structured and managed environment and will have the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.

Level 4	FAIL	MARGINAL FAIL	SATISFACTORY (3rd / Pass)	GOOD (2.2 / Pass)	VERY GOOD (2.1 / Merit)	EXCELLENT (1st / Distinction)	EXCEPTIONAL (1st / Distinction)
Category	**0-29%**	**30-39%**	**40-49%**	**50-59%**	**60-69%**	**70-84%**	**85-100%**
Engagement with literature (including reading, referencing, academic conventions and academic honesty)	Little or no evidence of reading and/or reliance on inappropriate sources. Views and findings mostly unsupported and non-authoritative. Referencing conventions used incoherently or largely absent.	Poor engagement with essential reading. No evidence of wider reading. Reliance on inappropriate sources, and/or indiscriminate use of sources. Heavily reliant on information gained through class contact. Inconsistent and weak use of referencing.	Engagement with a limited range of mostly relevant and credible sources but with some reliance on information gained through class contact. Some omissions and minor errors. Referencing conventions evident though not always applied accurately or consistently.	Engagement with an appropriate range of literature, including sources retrieved independently. Some over-reliance on texts rather than other sources. Referencing may show minor inaccuracies or inconsistencies.	Engagement with a wide range of literature, including sources retrieved independently. Selection of relevant and credible sources. Generally sound referencing, with no/very few inaccuracies or inconsistencies.	Engagement with an extensive range of relevant and credible literature. Consistently accurate application of referencing.	Exceptional engagement with an extensive range of relevant and credible literature. High-level referencing skills consistently applied.
Knowledge and understanding (Knowledge of the basic underlying concepts and principles of a subject.)	Major gaps in knowledge and understanding of the basic underlying concepts and principles of the subject matter.	Gaps in knowledge of the basic underlying concepts and principles, with flawed or superficial understanding.	Limited knowledge and understanding of the basic underlying concepts and principles within the subject area.	Knowledge of the basic underlying concepts and principles is accurate with a good understanding of	Competent knowledge of the basic underlying concepts and principles. Exhibits very good understanding.	Excellent knowledge and understanding of the basic underlying concepts and principles of the subject.	Exceptional, detailed knowledge and understanding of the basic underlying concepts and principles

Level 4	FAIL	MARGINAL FAIL	SATISFACTORY (3rd / Pass)	GOOD (2.2 / Pass)	VERY GOOD (2.1 / Merit)	EXCELLENT (1st / Distinction)	EXCEPTIONAL (1st / Distinction)
Category	**0-29%**	**30-39%**	**40-49%**	**50-59%**	**60-69%**	**70-84%**	**85-100%**
	Inclusion of irrelevant material. Substantial inaccuracies.	Some significant inaccuracies and/or irrelevant material.	Some elements may be missing.	the field of study but lacks depth and/or breadth.			
Cognitive and intellectual skills (Evaluate underlying concepts and principles of a subject and interpret qualitative and quantitative data in order to develop lines of argument and make sound judgements.)	Wholly or almost wholly descriptive work. Little or no evaluation of the underlying concepts and principles. Failure to develop arguments, leading to illogical or invalid judgements. Minimal or no use of evidence to back up views.	Largely descriptive work, with superficial evaluation of the underlying concepts and principles. Weak interpretation of data, flawed development of arguments and judgements. Information accepted uncritically, uses generalised statements made with scant evidence and unsubstantiated opinions. Ideas sometimes illogical and contradictory.	Limited attempt at evaluation of the underlying concepts and principles, tending towards description. Can interpret qualitative and quantitative data but with some errors. Some evidence to support emerging arguments and judgements but these may be underdeveloped or with a little inconsistency / mis-interpretation.	Good evaluation of the underlying concepts and principles. Can interpret qualitative and quantitative data, with minor errors. An emerging ability to use evidence to support the argument. Mostly valid arguments and logical judgements.	Sound evaluation of the underlying concepts and principles. Can interpret qualitative and quantitative data accurately. Ability to devise arguments using evidence to make mostly appropriate and valid judgements.	Excellent evaluation of the underlying concepts and principles. Can interpret qualitative and quantitative data accurately and with some insight. Excellent ability to devise arguments using evidence and make appropriate and valid judgements.	Exceptional evaluation of the underlying concepts and principles based evidence. Outstanding interpretation of qualitative and quantitative data. Exceptional ability to devise arguments using evidence and make wholly appropriate and valid judgements.
Practical skills (Different approaches to solving problems in particular contexts.)	Limited or no use of taught, basic methods, materials, tools and/or techniques. Little or no appreciation of the context of the application. Very weak evidence of	Rudimentary application of taught, basic methods, materials, tools and/or techniques but without consideration and competence. Flawed	An adequate awareness and mostly appropriate application of basic methods, materials, tools and/or techniques. Basic appreciation of	A good and appropriate application of basic methods, materials, tools and/or techniques. Clear appreciation of the context of the application.	A very good application of a range of basic methods, materials, tools and/or techniques. Very good consideration of the context of the application. Very good	An advanced application of a range of taught, basic methods, materials, tools and/or techniques. The context of the application is well considered, and insightful.	Exceptional levels of application and deployment skills in particular practical contexts. Outstanding identification of problems in particular

Level 4	FAIL	MARGINAL FAIL	SATISFACTORY (3rd / Pass)	GOOD (2.2 / Pass)	VERY GOOD (2.1 / Merit)	EXCELLENT (1st / Distinction)	EXCEPTIONAL (1st / Distinction)
Category	**0-29%**	**30-39%**	**40-49%**	**50-59%**	**60-69%**	**70-84%**	**85-100%**
	different approaches to problem-solving in particular contexts.	appreciation of the context of the application. Weak evidence of different approaches to problem-solving in particular contexts.	the context of the application. Can identify problems in particular contexts and propose basic alternative approaches or solutions though there may be errors.	Good evidence of different approaches to problem-solving in particular contexts and proposes mostly appropriate solutions.	evidence of different approaches to problem-solving in particular contexts and proposes appropriate solutions.	Excellent evidence of different approaches to problem-solving in particular contexts and proposes appropriate solutions.	contexts and formulation of wholly appropriate, thoughtful solutions / different approaches.
Transferable skills for life and professional practice (Communicate the results of their study/work accurately and reliably, and with structured and coherent arguments; the qualities needed for employment requiring the exercise of some personal responsibility within a structured and managed environment.)	Work is poorly structured, disorganised, inaccurate and/or confusingly expressed. Very weak use of language and/or very inappropriate style. Failure to work effectively individual or as part of a group. Little or no evidence of the skills for employment requiring the exercise of some personal responsibility.	Work is poorly presented in a disjointed manner. It is loosely, and at times incoherently, structured, with information and ideas often poorly expressed. Weak use of language and/or inappropriate style. Flawed approach to individual or group work, meeting only partial obligations to others. Limited evidence of the skills for employment requiring the exercise of some	Mostly ordered presentation and structure in which relevant ideas / concepts are reasonably expressed. Work may lack coherence and/or accuracy in places. Can work as part of a group, meeting most obligations to others but perhaps with limited involvement in group activities. Demonstrates the basic skills for employment requiring the exercise of some personal responsibility, with some areas of minor weakness.	Mostly coherent, organised and accurate work, in a suitable structure and is for the most part clearly expressed. Can work effectively independently and/or as part of a team, with clear contribution to group activities. Demonstrates the skills for employment requiring the exercise of some personal responsibility, with some areas of strength and some of minor weakness.	Work is accurate, coherent, fluent, well-structured and organised. Can work effectively independently and/or as part of a team, with very good contribution to group activities. Demonstrates very good skills for employment requiring the exercise of some personal responsibility, with just occasional minor weakness.	Work is coherent, very fluent and is presented professionally. Can work effectively independently and/or as part of a team, with an excellent contribution to group activities. Demonstrates excellent skills for employment requiring the exercise of some personal responsibility with an appetite for further development.	Work is accurate, exceptionally coherent, very fluent and presented well. Can work effectively independently and/or as part of a team, with an exceptional contribution to group activities. Demonstrates exceptional skills for employment requiring the exercise of some personal responsibility with an appetite for further development.

Level 4	FAIL	MARGINAL FAIL	SATISFACTORY (3rd / Pass)	GOOD (2.2 / Pass)	VERY GOOD (2.1 / Merit)	EXCELLENT (1st / Distinction)	EXCEPTIONAL (1st / Distinction)
Category	**0-29%**	**30-39%**	**40-49%**	**50-59%**	**60-69%**	**70-84%**	**85-100%**
		personal responsibility.					