

INTERNAL MODERATOR (or second marker)		Please ✓		Comments
		YES	NO	
1	Has agreement on the marks been reached?	✓		
2	Does feedback identify opportunities for improved performance?	✓		
3	Is feedback constructive?	✓		
4	Is the feedback linked to the appropriate category/ classification of the assessment criteria?	✓		
5	Is the feedback consistent across the sample?	✓		
6	Is there mention of improvement to referencing and consideration of unfair practice, where relevant?	✓		
7	Actions to complete <i>This box will expand as you type</i>			
8	How was agreement between markers reached? By verbal discussion, see appended marking sheets <i>This box will expand as you type</i>			

INTERNAL MODERATOR (or third marker, only where required, i.e. where the first two markers have been unable to reach a resolution)		Please ✓		Comments
		YES	NO	
1	Has agreement on the marks been reached?			
2	Does feedback identify opportunities for improved performance?			
3	Is feedback constructive?			
4	Is the feedback linked to the appropriate category/ classification of the assessment criteria?			
5	Is the feedback consistent across the sample?			
6	Is there mention of improvement to referencing and consideration of unfair practice, where relevant?			
7	Actions to complete <i>This box will expand as you type</i>			
8	How was agreement between markers reached? <i>This box will expand as you type</i>			

FOR COLLABORATIVE PROVISION ONLY

PARTNERSHIP TEAM LEADER		Please ✓		Comments
		YES	NO	
1	Has appropriate internal moderation taken place?			
2	Does feedback identify opportunities for improved performance?			
3	Is feedback constructive?			
4	Is the feedback linked to the appropriate category/ classification of the assessment criteria?			
5	Is the feedback consistent across the sample?			
6	Is there mention of improvement to referencing and consideration of unfair practice, where relevant?			
7	Actions to complete <i>This box will expand as you type</i>			

EXTERNAL EXAMINER REVIEW ONLY FOR THOSE MODULES / ASSESSMENT COMPONENTS detailed in the annual GA15 External Examiner Agreement

EXTERNAL EXAMINER		Please ✓		Comments
		YES	NO	
1	Has appropriate internal moderation taken place?			
2	Does feedback identify opportunities for improved performance?			
3	Is feedback constructive?			
4	Is the feedback linked to the assessment criteria?			
5	Is the feedback consistent across the sample?			
6	Is there mention of improvement to referencing and consideration of unfair practice, where relevant?			
7	Actions to complete <i>This box will expand as you type</i>			

Signed (second marker): 	Date: 23/05/2019
Signed (Partnership Team Leader):	Date:
Signed (External Examiner):	Date:

UWTSD PROVISION: please submit the completed document to the appropriate Programme Director.

COLLABORATIVE PROVISION: please submit the completed document (or make available electronically) to the Partnership Team Leader. This must be in accord with specific arrangements for sharing electronic documents (e.g. via SharePoint or similar).

NOTES ON MODERATION

All assessments which contribute to a final award/degree classification must be subject to moderation. At their discretion, Faculties may use double-marking in place of moderation.

Where moderation is used, a Moderation of Marked Assessment report (Appendix GA28) should be completed.

A list of marks for all assessment components for all students in the module should accompany the Moderation Form.

A representative sample of at least six pieces of work should be identified for moderation and should include:

- examples of work in the first class category (or equivalent for other awards);
- examples of work in the fail category;
- examples of work from each classification;
- examples of work within 2% of a classification boundary (or equivalent for other awards);
- any work on which the marker wishes for a second opinion.

If the moderation process identifies concerns relating to the marking in one or more categories, all work in the identified category must be double-marked and any residual differences in marks awarded by two markers must be resolved by means of discussion and negotiation. If such resolution is not possible, the work must be marked by a third marker identified by the Chair of the relevant Progression/Award Board. The marks awarded by the third marker are final. The process by which a final mark is agreed must be carefully documented so that the external examiner is able to follow that process.

Where a module is delivered by a collaborative partnership institution, moderation is normally a two stage process, with internal moderation at the collaborative partnership institution followed by University moderation.

THIS DOCUMENT IS ALSO AVAILABLE IN WELSH

SGEE6003 Major Project

DOUBLE MARKING SHEET AND COMBINED STUDENT FEEDBACK

Assignment 2 – Project Design, implementation and evaluation

2018-2019

Agreed mark

67%

Student Name: Liesel Mari Williams

Student Number 1202933

Generic Assessment Criteria	Marks available	1st Marker (RD)	2nd Marker (MH)	Agreed Mark
1. Engagement with Literature Skills.				
Section 3: Judicial use and critical evaluation of technical literature in the design of the project. (/5) Report contains good evidence of judicial usage of sources of technical literature employed in the design of the project solution particularly the vast amount of information presented in the drives manuals. The report contained extensive research particularly of technical literature relating to the project. Judicial use of this research was evident throughout. Report contains good evidence of judicial usage of sources of technical literature employed in the design of the project solution particularly the vast amount of information presented in the drives manuals. The report contained extensive research particularly of technical literature relating to the project.	5	4	4	4
Section 4: Extent of reading, range of credible sources and use of Harvard method (/5) Clear evidence of reading from a wide range of credible sources from the large amount of information available for the drives which has involved much searching. However, Harvard method is not always applied correctly and some items in the citation list are duplicated in the bibliography. There was excellent evidence of reading from a wide range of credible sources as indicated by the long reference list. Excellent evidence of reading from a wide range of credible sources from the large amount of information available for the drives which has involved much searching. However, Harvard method is not always applied correctly and some items in the citation list are duplicated in the bibliography.	5	3	4	3
Total	10	7	8	7
2. Knowledge and Understanding Skills				
Section 3: Advanced knowledge and critical understanding demonstrated in the design of the project (/10) There is very good evidence of advanced knowledge and critical understanding in the design of the project. This is seen in the mechanical, electrical and software aspects of the project. However, there is little explanation in the main report of the PLC program (though each section has been explained in the appendix), a clearer brief explanation could have been given in the main report. It is also to be noted that there is an error in the drawing for the modification made to the AC motor enable. A requirement was identified for a bespoke training aid to facilitate the teaching of motors. It was clear which parts of the final product were sub-contracted and how much was built locally. An opportunity exists to develop the rig as a sellable commodity. It would be a risk not to engage with IP and protect the design.	10	6	7	6.5

There is very good evidence of advanced knowledge and critical understanding in the design of the project. This is seen in the mechanical, electrical and software aspects of the project. However, there is little explanation in the main report of the PLC program (though each section has been explained in the appendix), a clearer brief explanation could have been given in the main report. It is also to be noted that there is an error in the drawing for the modification made to the AC motor enable. A requirement was identified for a bespoke training aid to facilitate the teaching of motors. It was clear which parts of the final product were sub-contracted and how much was built locally. An opportunity exists to develop the rig as a sellable commodity. It would be a risk not to engage with IP and protect the design.				
Total	10	6	7	6.5
3. Cognitive and Intellectual Skills				
Section 5: Testing and analysis of result (/10) There is very good evidence of testing and analysis of results presented graphically to see relationships between parameters and theory. The appendix contains a wide range of information that includes safety and risks. There was evidence of extensive testing and a detailed analysis of the results accompanied by substantiating research. There is very good evidence of testing and analysis of results presented graphically to see relationships between parameters and theory accompanied by substantiating research. The appendix contains a wide range of information that includes safety and risks.	10	6	8	7
Section 5: Critical evaluation of the project outcomes (/10) Good analysis of outcomes. However, each item in the FDS should have been considered in this section and commented upon. No reference made to the actual cost in this section. The evaluation provided a good overview of the project and its success/issues. No consideration to the wider issues was provided. Good analysis of outcomes. However, each item in the FDS should have been considered in this section and commented upon. No reference made to the actual cost in this section. The evaluation provided a good overview of the project and its success/issues. No consideration to the wider issues was provided.	10	6	7	6
Section 6: Conclusions and recommendations (/10) Conclusions briefly stated with some useful recommendation for further development of the project. Brief conclusions were included followed by more detailed recommendations on safety which should probably be implemented as a priority. Conclusions briefly stated with some useful recommendation for further development of the project. However, these should probably be implemented as a priority.	10	6	6	6
Total	30	18	21	19
4. Practical Application Skills				
Section 3: Formulation of innovative and creative design solution to the project problem. (/10) Excellent evidence of innovation and creativity in the design of the project, electrically, mechanically and software which has provided a very useful, safe, easy to use and aesthetically pleasing machine for use in a range of levels. The final product used good quality components with some recycling of refurbished motors. The use of RGB was good to see on an environmental basis. Excellent evidence of innovation and creativity in the design of the project, electrically, mechanically and software which has provided a very useful, safe, easy to use and aesthetically pleasing machine for use in a range of levels. The final product used	10	7	8	7.5

good quality components with some recycling of refurbished motors. The use of Regenerative Braking was good to see on an environmental basis.				
Section 4: Deployment method, use of material, tools, equipment and techniques in the construction of the project. (/10) Most of the mechanical and electrical construction was carried out by a subcontractor while panel mods were made by the student. Most of the construction has been in the PLC program mods and HMI screen designs which are of a good standard with the extensive use of TIA portal and SINAMICS software tools. The mechanical aspects were primarily sub-contracted. Most of the mechanical and electrical construction was carried out by a subcontractor while panel mods were made by the student. Most of the construction has been in the PLC program mods and HMI screen designs which are of a good standard with the extensive use of TIA portal and SINAMICS software tools.	10	6	5	5
Section 4: Quality of the final product or system (/10) Final product is of a good quality which includes the HMI screens and their functional features. The PLC program code modifications are also well documented in the program. The final product had some quality issues, mainly due to the sub-contractor. Final product is of a good quality which includes the HMI screens and their functional features. The PLC program code modifications are also well documented in the program. The final product had some quality issues, mainly due to the sub-contractor.	10	7	7	7
Section 5: Use of test equipment and presentation of results of the project (/5) Good evidence of use of testing with results recorded from the HMI screens and with the use of TIA Portal and SINAMICS software in on-line monitor mode. A good testing section was accomplished through the extensive use of appropriate test equipment. Good evidence of use of testing with results recorded from the HMI screens and with the use of TIA Portal and SINAMICS software in on-line monitor mode.	5	4	4	4
Sections 3 and 5: Management of the design process. (/5) Spreadsheet and Gantt chart demonstrate good management of the design process. Log book is well organised and clearly records progress made and the changes that were necessary in the development of the design. The project was well managed throughout, including a site visit to the sub-contractors facility in Manchester. Spreadsheet and Gantt chart demonstrate good management of the design process. Log book is well organised and clearly records progress made and the changes that were necessary in the development of the design. The project was well managed throughout, including a site visit to the sub-contractors facility in Manchester.	5	4	4	4
Total	40	28	28	27.5
5. Transferable Skills for Life and Professional Practice				
Sections 1 and 2: Executive summary, acknowledgements and introduction (/5) A good introduction and acknowledgements. However, summary only includes some of the report focusing too much on the outcome of the project. Executive summary read like the introduction and vice versa. Acknowledgements made to other contributors.	5	3	4	3

A good introduction and acknowledgements. However, summary only includes some of the report focusing too much on the outcome of the project.				
All Sections: Quality of the report – (/5) Well structured and presented with a good communication style. The report was very well written and presented in a professional manner. Well structured and presented with a good communication style. The report was very well written and presented in a professional manner.	5	4	4	4
Total	10	7	8	7
Grand Total	100	66	72	67

SGEE6003 Major Project

DOUBLE MARKING SHEET AND COMBINED STUDENT FEEDBACK

Assignment 2 – Project Design, implementation and evaluation

2018-2019

Agreed mark

46%

Student Name: Michael Charles Lewis

Student Number 1402807

Generic Assessment Criteria	Marks available	1st Marker (RD)	2nd Marker (MH)	Agreed Mark
1. Engagement with Literature Skills.				
Section 3: Judicial use and critical evaluation of technical literature in the design of the project. (/5) There is some evidence of use of technical literature in the form of datasheets for the design components. Component datasheets were used, but there was a lack of references to established testing parameters such as safe limits for magnetic exposure. There is some evidence of use of technical literature in the form of datasheets for the design components, but there was a lack of references to established testing parameters such as safe limits for magnetic exposure.	5	2	1	2
Section 4: Extent of reading, range of credible sources and use of Harvard method (/5) There is evidence of reading from credible sources but the number of sources is limited. Citations used were mainly correct and consistently applied. There is evidence of reading from credible sources but the number of sources is limited. Citations used were mainly correct and consistently applied.	5	3	4	3
Total	10	5	5	5
2. Knowledge and Understanding Skills				
Section 3: Advanced knowledge and critical understanding demonstrated in the design of the project (/10) The sample and hold circuit is a good simple design and the complexity of the C code and the explanation demonstrates advanced knowledge and critical understanding of programming techniques. However, not all aspects of the system design were completed and further explanations are needed. Knowledge of the project, what its purpose was and how it could be achieved was evident, however much of the intention failed to materialise in practice so demonstrating a critical understanding was only partially achieved. The sample and hold circuit is a good simple design and the complexity of the C code and the explanation demonstrates advanced knowledge and critical understanding of programming techniques. However, not all aspects of the system design were completed and further explanations are needed.	10	7	6	6
Total	10	7	6	6
3. Cognitive and Intellectual Skills				
Section 5: Testing and analysis of result (/10) Testing is limited to the sample and hold circuit with good results displayed as waveforms showing the input and output of the circuit, and the sound level from the	10	4	3	3

main coil. However, no testing or results were carried out for the ADC control or the USART comms link and user interface or the stepper drive circuit. Due to problems in the implementation phase, much of the testing was not possible. The components that were completed could have been tested more vigorously through simulation or the construction of a test bed. Testing is limited to the sample and hold circuit with good results displayed as waveforms showing the input and output of the circuit, and the sound level from the main coil. However, no testing or results were carried out for the ADC control or the USART comms link and user interface or the stepper drive circuit. Due to problems in the implementation phase, some of the testing was not possible. The components that were completed could have been tested more vigorously through simulation or the construction of a test bed.				
Section 5: Critical evaluation of the project outcomes (/10) A small number have been delivered with reasons given. The costs should have been given even though the components used with freely available to allow for a comparison with the budget. There was obvious disappointment from Mike about the way the project progressed, however the evaluation should have focused more on what was achieved rather than why things weren't. There was obvious disappointment about the way the project progressed, however the evaluation should have focused more on what was achieved rather than why things weren't. There is too much blame attributed to upper management.	10	5	4	4
Section 6: Conclusions and Recommendations (/10) Some conclusion are presented but the recommendations are more of a personal reflection on what went wrong rather than a plan for moving forward. Again, the focus was more on what went wrong and why. There should have been more on what went right and how the problems encountered could have been solved. Some conclusion are presented but the recommendations are more of a personal reflection on what went wrong rather than a plan for moving forward. There should have been more on what went right and how the problems encountered could have been solved.	10	4	4	4
Total	30	13	11	11
4. Practical Application Skills				
Section 3: Formulation of innovative and creative design solution to the project problem. (/10) A good simple design of the sample-and-hold circuit and good innovative skills shown in C code for the stepper drive and PC comms. However, not all parts of the design were completed. The design solution appears to be suitable for the problem in theory, but given the lack of progress this could not be confirmed. A good simple design of the sample-and-hold circuit and good innovative skills shown in C code for the stepper drive and PC comms. However, not all parts of the design were completed. The design solution appears to be suitable for the problem in theory, but given the lack of progress this could not be confirmed.	10	5	7	6
Section 4: Deployment method, use of material, tools, equipment and techniques in the construction of the project. (/10) Good evidence of deployment of correct methods, materials, tools and equipment in the construction of some of the project prototype. Good use of C programming software. However, a PCB was expected and a user PC interface. Construction was limited to the veroboard circuits with additional work on the software for the microcontroller. Good evidence of deployment of correct methods, materials, tools and equipment in the construction of some of the project prototype. Construction was limited to the	10	5	5	5

veroboard circuits with additional work on the software for the microcontroller. Good use of C programming software. However, a PCB was expected and a user PC interface.				
Section 4: Quality of the final product or system (/10) Project prototype developed on veroboard is of an acceptable standard. There was no final product as such with the individual circuits not being connected together. Project prototype developed on veroboard is of an acceptable standard. However, there was no final product as such with the individual circuits not being connected together.	10	5	2	3.5
Section 5: Use of test equipment and presentation of results of the project (/5) Some use of test equipment in measuring input and output waveforms for the sample and hold circuit, magnetic field and noise levels. The use of general purpose and special to type test equipment was evident. Some use of test equipment in measuring input and output waveforms for the sample and hold circuit, magnetic field and noise levels.	5	2	4	3
Sections 3 and 5: Management of the design process. (/5) Some evidence of planning but the FDS should have been revised due to the change in the project direction and the influences outside your control. By your own admission, you have underestimated the amount of work required to complete the project. This is a useful lesson to carry forward into the future. Log book shows good evidence of managing the design process with weekly entries demonstrating the changes that occurred outside the control of the student. The project seems to have run out of control with much of what was intended not being completed; contingency measures were not evident. The project seems to have run out of control with much of what was intended not being completed; contingency measures were not evident. Some evidence of planning but the FDS should have been revised due to the change in the project direction and the influences outside your control. By your own admission, you have underestimated the amount of work required to complete the project. This is a useful lesson to carry forward into the future. Log book shows good evidence of managing the design process with weekly entries demonstrating the changes that occurred outside the control of the student.	5	3	2	2.5
Total	40	20	18	20
5. Transferable Skills for Life and Professional Practice				
Sections 1 and 2: Executive summary, acknowledgements and introduction (/5) Executive summary covers some aspects of the project but does not give the outcome or success. No acknowledgements given and introduction contains general information that could be applied to any project – though a revised set of aims are presented. The executive summary was the introduction and the introduction was the aims and objectives	5	2	2	2
All Sections: Quality of the report – (/5) Generally good, clear diagrams/photos, pages and figures are number, word count has not been exceeded. However, there are a number of spelling, punctuation and grammatical errors that could have been resolved by more careful proof reading. Small diagrams were included in the annex, whereas large chunks of code were in the main report. Report didn't flow well with no block diagram and low level detail being explained without the higher level context.	5	3	1	2

Some good, clear diagrams/photos, pages and figures are numbered, word count has not been exceeded. However, there are a number of spelling, punctuation and grammatical errors that could have been resolved by more careful proof reading. Some diagrams which were included in the annex are small, whereas large chunks of code were in the main report. Report didn't flow well with no block diagram and low level detail being explained without the higher level context.				
Total	10	5	3	4
Grand Total	100	50	45	46