



INTERNAL ASSESSMENT APPROVAL FORM (INCLUDING COLLABORATIVE PROVISION)

This form is used to ensure that assessment specifications have been through an internal review process prior to external examination/approval and release to students. It should be completed for each assessment for a particular module. The assessment tasks, criteria and marking scheme should accompany this form.

PARTNER (and taught location if relevant):	Coleg Sir Gar				
EXTERNAL EXAMINER NAME:	Dr Alison Griffiths				
ASSESSMENT AUTHOR :	Robert Jenkins				
MODULE TITLE:	Electronic Production and Test				
MODULE CODE:	SGEE6002		MODULE LEVEL:	6	
COMPONENT NO. (e.g. 1 of 2):	1 of 2		COMPONENT WEIGHTING (e.g. 50% of the module):	50%	
ASSESSMENT PERIOD	☒ Semester 1	☐ Semester 1 <i>Re-sit</i>	☐ Semester 2	☐ Semester 2 <i>Re-sit</i>	<i>Other, please state</i>
TYPE OF ASSESSMENT:	☒ Coursework		☐ Examination		☐ Practical
LANGUAGE OF ASSESSMENT:	English		TRANSLATION REQUIRED (Y/N):	N	
FOR EXAMINATIONS ONLY. SPECIFY BELOW ANY ADDITIONAL MATERIAL(S) TO BE USED IN THE EXAMINATION					
<i>This box will expand as you type</i>					

INTERNAL MODERATOR PLEASE TICK TO INDICATE THAT THE ASSESSMENT INCLUDES:		Please		Comments
		YES	NO	
1	Tasks that are specified clearly, accurately and comprehensibly, with appropriate use of language and neat presentation	✓		
2	Tasks which enable the module learning outcomes to be demonstrated (as per the module syllabus)	✓		
3	Tasks which conform to the assessment described in the module syllabus	✓		
4	Tasks which are written at the appropriate level of the Framework for Higher Education Qualifications (see http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf?sfvrsn=170af781_14).	✓		
5	Clear criteria for assessment and guidance about how marking/grading will be applied	✓		
6	Guidance about expected evidence for submission, e.g. essay or report, word count, bibliography and references	✓		
7	Reference to good academic conduct, for example referencing, plagiarism and Turnitin	✓		
8	Actions to complete <i>This box will expand as you type</i>			
SIGNATURE OF APPROVAL:		SIGNATURE		DATE
INTERNAL MODERATOR: I confirm that this version of the assessment specification is ready to be sent to the Partnership Team Leader				6/1/21

ONLY TO BE COMPLETED IF THE ASSESSMENT IS LINKED TO A COLLABORATIVE PARTNER

PARTNERSHIP TEAM LEADER PLEASE TICK TO INDICATE THAT THE ASSESSMENT INCLUDES:		Please ✓		Comments
		YES	NO	
1	Tasks that are specified clearly, accurately and comprehensibly, with appropriate use of language and neat presentation			
2	Tasks which enable the module learning outcomes to be demonstrated (as per the module syllabus)			
3	Tasks which conform to the assessment described in the module syllabus			
4	Tasks which are written at the appropriate level of the Framework for Higher Education Qualifications (see http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf?sfvrsn=170af781_14).			
5	Clear criteria for assessment and guidance about how marking/grading will be applied			
6	Guidance about expected evidence for submission, e.g. essay or report, word count, bibliography and references			
7	Reference to good academic conduct, for example referencing, plagiarism and Turnitin			
8	Actions to complete <i>This box will expand as you type</i>			
SIGNATURE OF APPROVAL:		SIGNATURE		DATE
PTL: I confirm that this version of the assessment specification is ready to be sent to the External Examiner				

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).

The assessment tasks, criteria and marking scheme should accompany this form

LEVEL 6 ASSESSMENT SPECIFICATION

Student name:		Student ID number:	
Programme:	BSc (Hons) Electrical and Electronic Engineering		
Module:	Electronic Production & Test		
Module code:	SGEE6002	Contribution to Overall Module Assessment (%):	50%
Lecturer:	Robert Jenkins	Internal Verifier:	M.Hall
Assignment Title:	Fault Modelling	Word count (or equivalent):	3000
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)**

- Critically evaluate a range of processes, techniques and strategies required to successfully develop a prototype design into a fully manufactured and tested sustainable product.
- Apply expert knowledge to design a prototype product to meet user or customer needs with consideration for the wider engineering context, public perception and aesthetics, and relevant legal requirements governing engineering activities.

TASK DESCRIPTION

Aims & Objectives

The aim is to demonstrate a systematic understanding of electronic production techniques, with the awareness of commercial and manufacturing factors required to successfully develop a prototype design into a fully manufactured, tested and sustainable product.

The assignment will focus on ATE (Automatic Test Equipment) for testing a prototype design where research, simulation and practical investigations will be carried out. At this level, practical results must be compared with predicted performance from theory and simulation.

Assignment Tasks

Task 1 - Research

Critically evaluate a range of processes, techniques and strategies such as IC fabrication faults and SSF modelling required to successfully develop a prototype design into a fully manufactured, and tested sustainable product.

Critically evaluate the methods and techniques required to manufacture a sustainable product that meets the wider engineering requirements.

Research the effects of Electro Static Discharge (ESD) and prevention methods used within the electronic design and manufacturing process.

Task 2 – Prototype design and fault model

Design and build a circuit prototype of a combinational circuit consisting of a minimum of four gates, having 6 inputs and a single output to perform a specific function to meet customer needs.

- Implement 'Fault modelling' techniques using a 'stuck at' fault table to detect SA0 and SA1 faults on the prototype.

Task 3 – Prototype test to meet customer needs using ATE designs

Design ATE methods used in a production environment to demonstrate that the prototype meets customer needs by:

- Developing a 6 bit pattern generator ATE system which utilises the derived minimum number of test vectors required to test the circuit, and obtain a set of simulated test results using ECAD.
- Analysing the test results obtained and apply various different input faults and compare to the table produced by the fault modelling process.

- Build the prototype circuit on the NI ELVIS unit or the NI FPGA prototyping board, and use 2 of the 3 methods listed below to generate the minimum number of test vectors to test the prototype, namely:
 1. NI MultiSim circuit 6 bit pattern generator design
 2. NI LabView and the NI ELVIS prototyping board
 3. NI Multisim PLD mode with FPGA.

- Carry out an analysis of the practical results of the ATE systems by applying identical input fault conditions to the prototype.

Task 4 – CAM design of prototype (Computer Aided Manufacture)

Use an industry approved CAM software system to develop a double-sided sustainable prototype PCB of the CUT that meets customer needs and satisfies wider engineering, relevant legal and aesthetic requirements.

Task 5 – Conclusions and recommendations

Critically evaluate the test results for all methods of testing the prototype. How did the test results compare with theory and how well do the ATE designs perform in a production environment? What considerations should be taken into account for a production environment when designing ATE?

Comment on the overall performance of the test methods and summarise the considerations necessary for business and customer needs such as cost drivers.

GUIDANCE FOR STUDENTS IN THE COMPLETION OF TASKS

Requirements:

You are required to present a printed formal laboratory report containing detailed observational notes of your work. This report must be 3000 words and should be laid out in the following sections preceded by a title page and a table of contents:-

1. Executive summary
2. Research
3. Design of assignment requirements
4. Analysis of NI MultiSim results
5. Practical build and test using Labview
6. CAM design and build of prototype
7. Conclusions and recommendations.
8. Appendices including bibliography

You are expected to present a detailed critical analysis of all your observations and designs. The design and analysis should be evident in both the practical work and written work.

Your title page for the report must be in the following format:

Course:	BSc Electrical and Electronic Engineering
Module:	SGEE6002 – Electronic Production and Test
Assignment Title:	Regulated Power Supplies
Name:	???
University number:	???
Date Submitted:	DD/MM/YYYY
Word Count:	???? words

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 ToC and ToF
- 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 and upload the pdf version only 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
- Annexes 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. Significant differences from level 5 are highlighted in red.

- **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 make use of scholarly reviews and primary sources, where appropriate (for example, refereed research articles and/or original materials appropriate to the discipline).** You should provide evidence that you have accessed a wide *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 the quality and extent of your research with relevant sources. (Sections 1 and 8).*

- **Knowledge and Understanding Skills**

At level 6, you should be able to demonstrate **coherent and detailed** knowledge and **a systematic understanding of the subject area, at least some of which is informed by the latest research and/or advanced scholarship within the discipline.** You should be aware of the **uncertainty, ambiguity and limits of knowledge.** Your work must demonstrate the **growing extent of your knowledge and systematic understanding of concepts and underlying principles associated with the subject area.** *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. meaningfully to show your understanding. Your mark/grade will also depend upon the *extent* to which you demonstrate your knowledge and understanding; **ideally each should be complete and detailed, with comprehensive coverage.**

Guidance specific to this assessment: *This will be assessed by the application of the practical and simulation base on the knowledge gained in your research. (Sections 3 and 5).*

- **Cognitive and Intellectual Skills**

You should be able to: critically evaluate evidence, arguments, assumptions, abstract concepts and data some of which are at the forefront of a discipline (and that may be incomplete) to devise and sustain arguments, to make judgements and/or solve problems; describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in the discipline. Your work must contain evidence of logical, analytical thinking, evaluation and synthesis. 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? At all times, you

must provide justification for your arguments and judgements. Evidence that you have reflected upon the ideas of others within the subject area is crucial to you providing a reasoned and informed debate within your work. Furthermore, you should provide evidence that you are able to make sound judgements and convincing arguments using data and concepts. Sound, valid conclusions are necessary and must be derived from the content of your work. Where relevant, alternative solutions and recommendations may be proposed.

Guidance specific to this assessment: *This will be assessed by your analysis of the results and comparison to theory together with conclusions and recommendations. (Sections 4 and 7).*

- **Practical Skills**

At level 6, you should be able to **apply the methods and techniques that you have learned to review, consolidate, extend and apply your knowledge and understanding, and to initiate and carry out projects.** You will deploy accurately established techniques of analysis and enquiry relevant to the discipline, and apply them in complex and unpredictable contexts, to devise and sustain arguments and/or to solve problems. You should be able to **frame appropriate questions to achieve a solution - or identify a range of solutions.** 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 or circumstances, to assess current situations, perhaps to formulate plans or solutions to solve problems, or to create artefacts, some of which may be innovative and creative. 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. You should show awareness of the limitations of concepts and theories when applied in particular contexts.

Guidance specific to this assessment: *This will be assessed by the use of ECAD to demonstrate the design concepts, the practical using LabVIEW interface techniques and the quality of the test results and the CAM prototype design and manufacture. (Sections 4, 5 and 6).*

- **Transferable Skills for Life and Professional Practice**

Your work must provide evidence of the qualities and transferable skills necessary for **graduate-level** employment requiring the exercise of initiative and personal responsibility and decision-making in **complex and unpredictable circumstances.** This includes demonstrating: the **learning ability** for professional development to advance existing skills and acquire new competences of **a professional nature** that will enable you to assume significant responsibility within organisation; that you can initiate and complete tasks and procedures, whether individually and/or collaboratively; that you can use appropriate media to effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences; 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 overall quality of your report*

Achieving the PLO's 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 - Apply expert knowledge in the design of a prototype product with consideration given to business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics. This will be satisfied by the research, design requirements and recommendations in sections 2, 3, 5 and 6.

D5i - Manage the design process, including cost drivers, and evaluate outcomes. This will be satisfied by the design process and conclusion in sections 3 and 7.

ET1i - Demonstrate a systematic understanding of the need for a high level of professional and ethical conduct in engineering and a knowledge of professional codes of conduct. This will be satisfied by the practical implementation which involves discussions with other members of the group and third parties in sections 3, 5 and 6.

ET2i - Demonstrate knowledge and understanding of the commercial, economic and social context of engineering processes. This will be satisfied by the production process in section 2, 5 and 6.

ET3i - Demonstrate knowledge of management techniques that may be used to achieve engineering objectives. This will be satisfied by the management of prototypes to obtain the objective in section 3, 5 and 6.

ET4i - Demonstrate systematic understanding of the requirement for engineering activities to promote sustainable development. This is satisfied in the design stage in section 3 and 6.

ET5i - Apply expert knowledge in the design of a prototype product with consideration given to relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues. This is satisfied by the design and implementation of prototypes in sections 2, 3, 5 and 6.

EP6i - Apply expert knowledge in the design of a prototype product which includes quality issues and their application to continuous improvement. This is satisfied by the development of prototype models and their improvements toward the overall objective in sections 3, 5 and 6.

D6i - Communicate your work to technical and non-technical audiences. This will be satisfied by your technical report writing and by your executive summary in section 1, 2 and 7.

MARKING CRITERIA AND STUDENT FEEDBACK

Common Assessment Criteria Applied		Marks available	Marks awarded
1. Engagement with Literature Skills		15	
Section 1 and 2 IC Fabrication Faults:/5 Electrostatic Discharge (ESD):/5 'Stuck at' Fault model:/5			
2. Knowledge and Understanding skills		30	
Section 3 and 6 Derive a minimum set of test vectors for a specific digital design:/10 Design of LabView test vectors:/10 Design of MultiSim PLD schematic alternative:/5 CAM design of prototype:/5			
3. Cognitive and Intellectual Skills		15	
Sections 4 and 7 Analysis of ECAD test results for the design:/10 Comparison to theory:/5			
4. Practical Application Skills		25	
Section 5 and 6 Prototyping of circuit under test (CUT):/10 NI LabView or FPGA testing of CUT:/15			
5. Transferable Skills for Life and Professional Practice		15	
All sections Deployment of appropriate media:/5 Report layout:/5 Appropriate conclusion:/5			
Assignment 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 one-week late (40% max)		
	Over 1 week late (0%)		

This section details the assessment criteria. The *extent* to which these are demonstrated by you determines your mark. The marks available for each criterion 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

Level 6

In accordance with the Framework for Higher Education Qualifications, at the end of Level 6 students should have coherent and detailed knowledge and a systematic understanding of their subject area, at least some of which is informed by the latest research and/or advanced scholarship within the discipline. They will be able to accurately deploy established techniques of analysis and enquiry within a discipline, using their conceptual understanding to devise and sustain arguments and/or to solve problems. They should be aware of the uncertainty, ambiguity and limits of knowledge. They should be able to critically evaluate evidence, arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions. They will apply the methods and techniques that they have learned to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects. They will have the ability to manage their own learning, and to make use of scholarly reviews and primary sources (for example, refereed research articles and/or original materials appropriate to the discipline). They will demonstrate the qualities and transferable skills necessary for employment requiring: the exercise of initiative and personal responsibility; decision-making in complex and unpredictable contexts; the learning ability needed to undertake appropriate further training of a professional or equivalent nature.

Level 6	FAIL	MARGINAL FAIL	SATISFACTORY (3 rd / Pass)	GOOD (2.2 / Pass)	VERY GOOD (2.1 / Merit)	EXCELLENT (1 st / Distinction)	EXCEPTIONAL (1 st / 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	Poor engagement with essential reading. No evidence of wider reading. Reliance on inappropriate sources, and/or indiscriminate use of sources. Heavily reliant	Engagement with a limited range of mostly relevant and credible sources. Some omissions and minor errors. Referencing conventions evident though not always applied	Engagement with an appropriate range of research-informed literature, including sources retrieved independently. Some over-reliance on	Engagement with a wide range of research-informed literature, including sources retrieved independently. Selection of relevant and credible	Engagement with an extensive range of relevant and credible literature, informed by the latest research. Consistently accurate	Exceptional engagement with an extensive range of relevant and credible literature, informed by the latest research. High-level referencing skills

	used incoherently or largely absent.	on information gained through class contact. Inconsistent and weak use of referencing.	accurately or consistently.	texts. Referencing may show minor inaccuracies or inconsistencies .	sources. Very good use of referencing, with no/very few inaccuracies or inconsistencies .	application of referencing.	consistently and professionally applied.
Knowledge and understanding (Coherent and detailed knowledge and systematic understanding of the subject area, at least some of which is informed by the latest research and/or advanced scholarship within the discipline.)	Major gaps in knowledge and systematic understanding of the subject matter. Substantial inaccuracies. No awareness of knowledge of the latest research and/or advanced scholarship within the discipline.	Gaps in knowledge, with only superficial systematic understanding. Some significant inaccuracies and/or irrelevant material. No awareness of knowledge of the latest research and/or advanced scholarship within the discipline.	Limited knowledge and systematic understanding of the relevant concepts and principles within the subject area which to some limited extent, is informed by current research and scholarship.	Knowledge is reasonably detailed, accurate with a good systematic understanding of the field of study and to some extent, current research and scholarship.	Knowledge is reasonably extensive coherent and detailed. Exhibits very good understanding of the breadth and depth of established views, and the work is, at least in part, well-informed by current research and scholarship.	Excellent coherent and detailed knowledge and systematic understanding of the principles and theories of current research and scholarship. Clear awareness of challenges to established views and the limitations of the knowledge base.	Exceptionally coherent and detailed knowledge and systematic understanding of the principles and theories of the subject, well-informed by current research and scholarship. A critical, sophisticated and nuanced awareness of the ambiguities and limitations of knowledge.
Cognitive and intellectual skills (Conceptual and critical thinking,	Wholly or almost wholly descriptive work. Little or no analysis,	Largely descriptive work, with superficial use of critical	Limited attempt at critical thinking, analysis, synthesis and	Some critical thinking, analysis, synthesis and evaluation.	Sound critical thinking, analysis, synthesis and evaluation	Excellent critical thinking, analysis, synthesis and	Exceptional critical thinking, analysis, synthesis and evaluation

analysis, synthesis and evaluation of research, assumptions, abstract concepts and data (that may be incomplete); logic, argument and judgement.)	synthesis or evaluation. Failure to develop arguments, leading to illogical or invalid judgements. Unsubstantiated generalisations, made without use of any credible evidence.	evaluation. Weak development of arguments and judgements. Information accepted uncritically, uses generalised statements made with scant evidence and unsubstantiated opinions. Ideas sometimes illogical and contradictory.	evaluation, tending towards description. Some evidence to support emerging arguments and judgements but these may be underdeveloped or with a little inconsistency / mis-interpretation. Asserts rather than argues a case.	Can analyse new and/or abstract concepts and data without guidance. An emerging awareness of different stances and ability to use evidence (that may be incomplete) to support the argument. Mostly valid arguments and logical judgements. Some tendency to assert/state opinion rather than argue on the basis of reason and evidence.	demonstrating critical thinking. Ability to devise and sustain persuasive arguments, and to review the reliability, validity and significance of evidence (that may be incomplete) to make mostly appropriate and valid judgements.	evaluation. Ability to investigate contradictory or incomplete information and make strong, persuasive, arguments and sophisticated judgements. Some evidence of independent thought and ability to 'see beyond the question', suggesting a grasp of the broader field and wider concepts.	based on judiciously selected evidence. Ability to investigate contradictory or incomplete information and make strong, persuasive, arguments and sophisticated, nuanced, judgements. Evidence of independent thought and ability to 'see beyond the question', suggesting an outstanding grasp of the broader field and wider concepts.
Practical skills (Apply/deploy accurately established tools and techniques; initiate and carry out projects; formulate solutions)	Limited or no use of methods, materials, tools and/or techniques.	Rudimentary application of methods, materials, tools and/or techniques but without	An adequate awareness and mostly appropriate application of well-established	A good and appropriate application of standard methods, materials, tools	A very good application of a range of methods, materials, tools and/or techniques.	An advanced application of a range of methods, materials, tools and/or techniques.	Exceptional levels of application and deployment skills in unpredictable, practical

to solve problems in complex and unpredictable contexts.)	Little or no appreciation of the context of the application. Limited understanding of the application of theory to practice or making appropriate links between the two. Very weak problem-solving skills in complex and unpredictable contexts.	consideration and competence. Flawed appreciation of the context of the application. Weak understanding of the application of theory to practice, with only occasional evidence of making appropriate links between the two. Weak problem-solving skills in complex and unpredictable contexts.	methods, materials, tools and/or techniques. Basic appreciation of the context of the application. Theoretical knowledge and understanding applied in practice, but not always making logical links between the two. Can identify problems and propose basic solutions in complex and unpredictable contexts without fully appreciating the complexity.	and/or techniques. Clear appreciation of the context of the application. Mainly consistent, accurate and logical application of theory to practice, making appropriate links between the two. Can identify problems and propose mostly appropriate solutions in complex and unpredictable contexts.	Very good consideration of the context of the application, with perceptive insights. Can identify problems and propose appropriate solutions in complex and unpredictable contexts. Evidence of some innovation and creativity.	The context of the application is well considered, and insightful. Application and deployment extend beyond established conventions. Can identify complex problems and propose excellent solutions. Innovation and creativity evident.	contexts, drawing skilfully on the latest research within the discipline. Can identify complex problems and propose sophisticated solutions. Assimilation and development of cutting edge processes and techniques.
Transferable skills for life and professional practice (Exercise of initiative and personal responsibility;	Communication medium is inappropriate or misapplied. Work is poorly structured, disorganised and/or	Communication medium is poorly designed and/or not suitable for the audience.	Can communicate in a suitable medium but with some room for improvement.	Can communicate effectively in a suitable format, but may have minor errors. Mostly coherent,	Can communicate well, confidently and consistently in a suitable format.	Can communicate professionally confidently and consistently in a suitable format.	Can communicate with an exceptionally high level of professionalism .

professional development; initiate and complete tasks and procedures: individually and/or collaboratively; use appropriate media to communicate effectively; fluency of expression; clarity and effectiveness in presentation and organisation.)	confusingly expressed. Very weak use of language and/or very inappropriate style. Little or no evidence of autonomy (or collaboration, where relevant) in the completion of tasks. Little or no evidence of the skills required in graduate employment.	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. Weak independent initiative (or collaboration, if relevant). Limited evidence of the skills required in graduate employment.	Mostly ordered presentation and structure in which relevant ideas / concepts are reasonably expressed. Work may lack coherence in places. Can work as part of a team, but with limited involvement in group activities. Demonstrates the basic skills required in graduate employment, with some areas of minor weakness.	organised 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 required in graduate employment, with some areas of strength and some of minor weakness.	Work is coherent, fluent, well-structured and organised. Can work very well autonomously and/or as part of a team, with very good contribution to group activities. Demonstrates very good graduate employment skills, with just occasional minor weakness.	Work is coherent, very fluent and is presented professionally . Can work autonomously with initiative. Where relevant can work professionally within a team, showing leadership skills as appropriate, managing conflict and meeting obligations. Demonstrates excellent graduate employment skills and an appetite for further development.	Work is exceptionally coherent, very fluent and is presented professionally. Can work exceptionally well and professionally within a team, showing advanced leadership skills. Demonstrates exceptional graduate employment skills and an appetite for further development.
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