**<Project Title>**

**Project Number < YY/XXX >**

**< CEED Client >**

**Project Summary**

The project summary must provide a clear, concise summary of the project. It must briefly identify the what, why, how and intended outcomes of the project:

* What are the subject and objectives of the project?
* Why is the project important to the client?
* How are the objectives to be achieved (and what resources are required)?
* Intended Outcomes – what are the deliverables of the project?

The summary is a “shop window” for your project. Care must be taken in its preparation, as it is the first (and maybe only) part of the brief that will be read. As such, it provides an important first impression of the quality of your work. It should be a maximum of 250 words (this sample is 155 words), and must also be limited to ensure that the summary, the headings above, and the list of project participants below all appear in this cover page (without manipulating the fonts or formatting).

**<CEED Student>**

<School>, <University>

**< Academic Supervisor(s)>**

<School(s)>, <University>

**< CEED Client Mentor(s)>**

<Department/Facility>, <CEED Client>

**<Date>**

**1. Project Background**

**1.1 Problem Statement**

The problem statement describes **WHAT** the project is about, and **WHY** it is important to the client.

“WHAT” means the issue(s) being addressed by the project. This should be captured succinctly, ideally using descriptive graphics or tables to illustrate the issue. The exact form will vary by discipline and project, but the reader should understand the issue within the first few paragraphs and figures.

“WHY” covers the implications of the issue for the client, which may include:

* Financial costs
* Productivity
* More effective use of limited resources
* Environmental issues
* Health and safety issues
* The need for informed policy formulation
* The impacts of a policy

**1.2 Background Information**

This section should start by summarising the current state of the issue:

* How is the issue currently being handled?
* What is the current understanding of the issue?

The history of the issue within the client or other stakeholders must also be discussed:

* How has past history influenced the current situation at the client?
* How did the issue develop?
* What attempts have previously been made to address the issue, with what success?

Understanding the history is critical to formulating novel approaches, and ensuring you avoid repeating unsatisfactory approaches.

**1.3 Current and Future Client Environment**

The current environment at the client affects the project, and has probably motivated their sponsoring the project – as can forthcoming changes. Factors to consider include:

* Has existing equipment/plant reached the end of its useful life?
* Has new data emerged that was not previously available?
* Does the organisation have new priorities (for example – is it seeking to achieve carbon neutral operation, necessitating novel approaches)?
* Has new funding become available to pursue an issue?
* Is new legislation likely to mandate or permitchanges to current approaches?
* Are significant organisational changes happening or expected in the near future?
* Are operations subject to fluctuations in commodity prices?

It is important the current and future environment be taken into account in formulating your objectives and project plan, to maximise the immediate and future utility of your deliverables.

**2. Project Objectives and Benefits Analysis**

* 1. **Objectives**

This section details the specific objectives to be pursued in the CEED project. The Problem Statement in section 1.1 describes the full scope of the issue, placing the project in context; this section focus on the specific aspects of the issue to be addressed in this project.

**2.2 Benefits Analysis**

The benefits analysis describes the business value that will be realized through the project deliverables. This is a unique element of CEED projects, and an important one. Graduate recruiters prize students who understand the value of their work in the context of the larger business, but expect that it is something most graduates will have to be taught – if you can demonstrate this ability in interviews you will stand out.

In many cases, the benefits will be financial. It is not easy to predict financial returns, particularly at an early stage of the project - so often the best approach is to quantify the current costs associated with the issue, effectively quantifying the potential stakes.

Of course, the benefits may not always be entirely financial. Other types of benefits include:

* Assessment of an environmental, health or safety issue – directly affecting the client’s ability to operate and/or social license;
* Providing data or evidence to support the formulation of policies, legislation, or platforms for lobbying legislators
* Enabling more efficient allocation of limited resources

**3. Project Execution Plan**

* 1. **Process**

This section describes the process by which the project objectives are to be achieved. The nature of the process will vary according to the discipline and specific project, but all projects should be broken down into specific tasks, with the approach to be taken to accomplishing each task being described in detail.

Sufficient detail must be provided for the reader to understand the scope of work, the resources required, the costs, and the likely time needed to accomplish each task. This will entail:

* For experiments: describing the equipment, techniques, any applicable standards, and the number and type of samples/test pieces required
* For modelling and analysis: specifying the software packages and techniques to be used, and the computing resources required.
* For data analysis: identifying the source(s) of the data, analysis software packages required, and the procedures needed to extract and prepare the data for analysis.
* For community/industry surveys, how the surveys are to be formulated, distributed and analysed
* Detailing any human or animal ethics approvals required for the projects.

In most CEED projects, constraints may be imposed on the choice of methodology by:

* Client organisational practices and standards
* Client regulatory obligations and applicable Australian or international standards
* Equipment available at the client and the University
* Software available, preferred, and licensed for use at the client and University (noting that the University or the client must hold a license that permits professional use of the software – many University licenses prohibit such use).
* Project budget limitations

**3.2 Project Timeline**

The project timeline describes the sequence of tasks, and the expected start and finish dates for each task. A graphical representation in the form of a Gantt chart is the best way to describe the project timeline, and is required in all CEED project briefs. Microsoft Project is a user-friendly software package for preparing Gantt charts, and is available in all UWA computing labs and on UniDesk.

When preparing your Gantt chart, it is important to identify the tasks that form the critical path for the project, as well as the pre-requisite chains for all tasks (MS Project makes it easy to link dependent tasks). It’s important to be conscious of the potential for variation in the time predicted for each tasks – the Gantt chart in your project brief will be your best estimate at the time of preparation, and circumstances will change as the project continues. Be aware of how much (or how little) leeway you have on critical tasks, particularly given that delays outside your control will inevitably arise.

One hack to help you maintain progress, and perhaps more importantly maintain the feeling of making positive progress, is to break down each overall task into smaller subtasks (1-2 weeks long). The preparation of a more detailed plan can only have a positive effect on project execution – and checking things off and having regular “victories” will help you stay positive during a 12 month CEED long project.

One other key to making an effective project timeline is to focus on the research tasks that must be undertaken to achieve the objectives, and ensure that the majority of the tasks on the Gantt chart relate to the research, rather than unit and CEED submissions. Remember – without the research, you won’t have anything worth submitting! As a rule of thumb, if the submission items (preparations and delivery for the project brief, project proposal, CEED and school seminar, and thesis) take up more than 25% of your Gantt chart, then you have the balance wrong, and need to pay more attention to the research tasks.

**3.3 Resources**

For this section, you will provide a table detailing the resources needed to achieve the process set out in section 3.1, any associated costs, whether the resources are currently available or to be developed during the project, and identifying the party responsible for providing each resource (the University or the Client). Your mentor, supervisor and CEED director will sign off on the brief, and this table is essential to ensuring that all parties understand and agree to their commitments.

Note – you still have to obtain written authorisation for expenditures, separate to the approvals in the brief. Often the details of expenditures won’t be known until after the brief is signed.

**3.4 Risk Management**

One of the most important elements of project management is to understand potential problems outside your direct control, or “risks”, that may affect the project, and to identify “risk management” strategies to eliminate or mitigate these risks. Research projects are subject to a variety of risks, including;

* Failure or unavailability of critical experimental equipment
* Unavailability of data or facilities at the client
* Changes in the business situation of the client
* Competing priorities in 3rd party stakeholders Failure of a key technique to deliver the results needed to achieve the objectives.
* Extended absence of the supervisor, mentor or other key personnel.
* Delays in workshop fabrication or procurement
* Loss of data (through computer failure)
* Delays in ethics approvals

Recognising risks and developing risk management strategies at an early stage promotes project success. Indeed, simply being aware of the risks may enable scholars to avoid potential pitfalls. Risk management approaches could include;

* Developing alternate plans or objectives in the event of equipment loss
* Scheduling work involving 3rd parties as early possible, to provide a buffer against delays
* Identifying alternate techniques that may provide useful data in the event that the preferred approach does not work.
* Developing strategies to ensure security of data.

| **Likelihood** | **Description** |
| --- | --- |
| Probable | The event is expected to occur within the time frame of the project |
| Possible | The event is not expected to occur in the time frame of the project |
| Improbable | Conceivable but highly unlikely to occur during the project |
| **Consequence** | **Description** |
| Severe | Most objectives cannot be achieved |
| Major | Some important objectives cannot be achieved |
| Moderate | Some objectives affected |
| Minor | Minor effects that are easily remedied |
| Negligible | Negligible impact on objectives |

**Table 1** Guidelines for classifying the likelihood and consequences of risk factors. (Based on HB 436:2004 Risk Management Guidelines – companion to Australian Standard AS/NZ 4360:2004)

As an element of the project brief, you are required to provide a table identifying and describing the risks affecting their project, and to describe strategies for eliminating or mitigating these risks. For each risk, you must provide;

* A brief description of the risk
* The likelihood of the risk eventuating
* The consequences of the risk
* The management strategies to be adopted to mitigate the consequences of the risk.

In classifying the likelihood and consequences of the risk, the guide (Based on HB 436:2004 Risk Management Guidelines – companion to Australian Standard AS/NZ 4360:2004) listed in table 1 above should be followed (Note – Table 1 should not appear in your brief. Only a table summarising the risks relevant to your project should be provided).

**3.5 Personnel and Communications**

To facilitate communications, list the names, positions and contact information of all personnel at the Client organisation who will be involved in supporting the project, all staff involved at the University, and the CEED office Team in a table, as illustrated in Table 2 below – and don’t forget to include yourself!!!!.

Next, set out the planned schedule for meetings and reporting. You should list the frequency (eg fortnightly, monthly, quarterly) and location of any planned project meetings. If there any requirements for periodic reporting (above and beyond the monthly reports that you are required to provide), this should be specified in this section.

Finally, you must list any specific reporting requirements for your project. Your client may require that approval be given for you to undertake certain portions of the project. For example, you may need to contact client staff, customers or stakeholders, and the client may wish to pre-approve the contact list and approve the form of the contact (such as the form of any questionnaires or surveys). The client may also need to be involved in approving the design of any experimental equipment or procedures. The project brief must list any such requirements, along with the communication protocols to be followed in each instance.

| **Name** | **Position** | **Phone** | **E-mail** |
| --- | --- | --- | --- |
| Jane Student | CEED Scholar | (0xxx) xxx xxx | Jane.student@uniaddress.edu.au |
| Joe Bloggs | Operations Manager (Client Mentor) | (08) 9555 3555 | Joe.bloggs@company.com.au |
| John Doe | Operator (Deputy Client Mentor) | (08) 9555 3555 | jdoe@company.com.au |
| Dr. Jane Doe | Academic Supervisor | (08) 6488 5555 | Jane.doe@uwa.edu.au |
| Amanda Bolt | CEED Admin Office | (08) 6488 3130 | ceed@uwa.edu.au |
| Jeremy Leggoe | CEED Director | (08) 6488 7315 | Jeremy.Leggoe@uwa.edu.au |

**Table 2** Key Project Personnel

**3.6 Confidentiality**

While we take the default position that all CEED projects are confidential, and publications and public presentations MUST be approved by the client (see section 3.7 below), your project may have specific confidentiality requirements. In some CEED projects, specific contracts or non-disclosure agreements dictate confidentiality requirements; the standard CEED Project Agreement also includes some generic clauses related to confidentiality.

In the project brief you must define any specific confidentiality conditions and agreements for your project. This may require setting out how you will meet your obligations to the Client while still meeting the requirements for assessment in your School. This section should include;

* The nature of any material to be held in confidence;
* The nature of the restrictions imposed on any publications and presentations;
* Any obligations to be imposed on assessment submissions and assessment markers.
* The period over which material must be held confidential (note – some typical conditions are included in the CEED Standard Project Agreement; additional conditions may be imposed if there is a specific contract for your project).

**3.7 Publication and Presentation Approval**

The CEED seminar is a public event, and the seminar proceedings are available publicly. You and your project team may also choose to prepare a journal article for publication. Public presentations may also be prepared, for example for technical society meetings.

**Material from CEED projects can only be publicly presented or published with the written approval of the client.**

The approval procedure is different for each client, but as a rule of thumb you can expect it to take 2-3 weeks, and involve a number of departments. It is almost never as simple as simply having your mentor review the paper – most large organisations have formal procedures (which your mentors may not initially be familiar with) and legal obligations to meet. This section must document in detail the approval procedure for your client. This should include:

* The lead time required for approval
* Who the paper/presentation should initially be submitted to
* The steps in the process.

**All CEED seminar papers and presentations must be approved in writing by the client for public release.**

In addition to the CEED seminar, your project unit will usually require some form of presentation. In general, CEED projects are presented in confidential sessions, so that you can work on your assessed presentation up to the date of the presentation (without having to stop early to secure approval). You must notify your school office and/or unit coordinator that you require a confidential presentation. The CEED office can assist if the school needs clarification regarding our contracted obligations. If you choose to present in an open session, then the usual approval procedure **MUST** be followed.

**4. Deliverables**

List the deliverables, specifying the format they are to be delivered in. The deliverables must be precisely defined so that there can be no doubt between the parties as to what is expected – this is essential to ensure that the acceptance process can go smoothly. The format of some deliverables may be dictated by the document and data management systems used by your client.

The deliverables should be arranged as a bulleted list, as follows (with examples);

* Project Report – This may simply be the thesis/report that you submit for assessment. If so, it should be specified as such; if not, the way in which the report provided to the client differs from a conventional thesis/report should be described.
* Matlab Program for performing Model Calculations (note that the coding platform, Matlab, is specified)
* Manual for the Matlab Program – a word document/pdf (pick one, as required) containing comprehensive instructions for Client staff using the program.
* The raw data for the project, provided in text files/excel spreadsheet as appropriate (pick one)
* Key models executed in the project, provided on a thumb drive/an external hard drive (pick one)
* etc, as necessary…..

**5. References**

Starting on a new page, the references should be listed according to the APA citation convention ([Introduction - APA 7 referencing style - Guides at University of Western Australia (uwa.edu.au)](https://guides.library.uwa.edu.au/apa)). The references must be formatted as shown below.

Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. Psychology of Popular Media Culture, 8(3), 207-217. https;//doi.org/10.1037/ppm0000185

Quinn, C.J. & Jones, K.L. (1993) Using The Correct Style “Paper References”. *Journal Name*, **23** (18) pp. 234-38.

**6. Endorsement**

**Student**

Print Name

Date

**Client Mentor(s)**

Print Name(s)

Date

**Academic Supervisor(s)**

Print Name(s)

Date

**CEED Director**

Print Name

Date