

PREPARATION & SUBMISSION OF UNDERGRADUATE PROJECTS ENGG456/ ENGG457

PROJECT GUIDELINES 2020: STUDENTS & SUPERVISORS



Faculty of Engineering and Information Sciences

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1. INTRODUCTION

ENGG456 is a final year subject that provides students with an opportunity to undertake an in-depth exploration of an engineering topic under the supervision of academic staff. On successful completion of the final year project a student should be able to:

- (i) Define clearly the aims and objectives of a given investigation.
- (ii) Retrieve and analyse previous work on related problems (critical literature review).
- (iii) Formulate methods for problem solution.
- (iv) Plan, design and execute a procedure to solve the problem.
- (v) Collect data and evaluate findings.
- (vi) Communicate conclusions and solutions in writing.

ENGG456 requires students to take the lead in their learning and demonstrate their ability to work independently and seek assistance when needed. Students are encouraged to develop good organisational practices from the outset and should produce a schedule of anticipated activities at the earliest opportunity. The responsibility for successful Project Management lies with each student and therefore a detailed project log should be maintained. A work program diagram (e.g. a Time/Task Chart) or other appropriate material (e.g. project log or laboratory book) should be maintained. This material must accompany any formal request for an extension of a deadline. The ENGG456 Project is an opportunity for students to demonstrate that they are prepared for the expectations of industry practice in terms of initiative, professionalism and technical competence. Students have the primary responsibility for the timely completion of the project and assessment tasks. Specific responsibilities are:

- to develop a project proposal and plan for completing the project within the timeframe stipulated elsewhere in this document;
- to maintain regular contact with the supervisor(s);
- to present required written material to the supervisor(s) in sufficient time to allow for comments and discussions before scheduled meetings;
- to undertake additional work towards their project identified as necessary by the supervisor(s);
- to leave adequate time at the end of session to account for unpredictable occurrences;
- to accept responsibility for the quality and originality of all submitted work.

Projects will be completed in one session. Some students may be given the opportunity to continue their project for a second semester under the same supervisor, and will enrol in ENGG457. This will be discussed and agreed upon by the project supervisor, the student and the subject coordinator.

1.1 Topic selection

Students will be given an opportunity to nominate a list of preferred topics and supervisors a few weeks before the session starts. Details of the nomination procedure will be advised by the relevant school's subject coordinator through SOLS mail to students enrolled in the subject. The school's subject coordinator will then assign topics and supervisors on the basis of "first come first serve" basis.

A student may also approach an academic staff directly with a proposed topic of their own. If the academic agrees to supervise the student, then the student must advise the school's subject coordinator.

1.2 Introductory Lecture and Workshops

A number of lectures and workshops will be held to give students necessary training in various aspects of report preparation. **Attendance of these activities is compulsory for students enrolled in ENGG456 Engineering Project A.** Penalties apply for not attending these workshops. Penalties and workshop/lecture times and dates are detailed in the ENGG456 subject outline. Topics for lectures and workshops are:

- Lecture: Outline of ENGG456
- Workshop 1: Writing the Research Proposal
- Workshop 2: Report structure and writing style
- Workshop 3: Using evidence and referencing
- Workshop 4: Presenting data and techniques for self-editing

Project students are also welcome to borrow past theses related to their project topic from EIS Central. Students may borrow one thesis for two weeks on presentation of their Student ID. Past project reports are held by the Supervisor.

1.3 Project supervision

It is the student's responsibility to arrange regular times for discussion with his/her Supervisor. If students have problems of a general nature they should firstly contact the school's subject coordinator.

The overriding responsibility of supervisors is to provide continuing support to students in researching and producing a project to the best of the student's ability. Specific other responsibilities are:

- to advise and assist students to comply with occupational health and safety and ethics requirements where relevant;
- to support students in developing a proposal for their project within the required time frame;
- to assist students to develop a plan for completing the project within the stipulated time frame;
- to ensure that the overall work requirements are commensurate with a 6 credit point project;
- to ensure that additional work beyond the agreed scope, particularly additional work close to the submission date, is absolutely necessary and does not unreasonably add to the students' work commitments;
- to maintain regular contact with students in order to monitor their progress;
- to inform students about any planned absences during the candidature and arrangements for supervision during those absences;
- to provide timely and helpful written feedback to students on any submissions and to assist them to develop solutions as problems are identified;
- to advise students of inadequate progress or work below the standard generally required and to suggest appropriate action;
- to submit marks from progress reports to the school's subject coordinator within 7 days of the feedback date;
- to determine the second marker, in consultation with the school's subject coordinator, at the time of allocation of the topic;
- to attend meetings of the academic unit assessment committee where students' grades are determined.

1.4 Assessment Requirements

There are four key assessment submissions over the course of the semester. There are three distinct types of ENGG456/7 projects: Engineering Consulting Report, Engineering Research Paper, or Engineering Tendering. Assessment criteria and format for each of the four assessments differ for each of the project types. The students' supervisor will indicate which of the three project types each student is to follow. A formatting guide and assessment criteria for each of the project types are included in Sections 2, 3, and 4.

Supervisors and students should refer to the subject outline regarding submission and feedback dates. The assessment weightings are also given in the subject outline.

1.5 Responsibilities of Supervisors and Students

1.5.1 Responsibilities of Supervisors

The overriding responsibility of supervisors is to provide continuing support to students in researching and producing a project to the best of the student's ability. Specific other responsibilities are:

- to advise and assist students to comply with occupational health and safety and ethics requirements where relevant;
- to support students in developing a proposal for their project within the required time frame;
- to assist students to develop a plan for completing the project within the stipulated time frame;
- to ensure that the overall work requirements are commensurate with a 6 credit point project;
- to ensure that additional work beyond the agreed scope, particularly additional work close to the submission date, is absolutely necessary and does not unreasonably add to the students' work commitments;
- to maintain regular contact with students in order to monitor their progress;
- to inform students about any planned absences during the candidature and arrangements for supervision during those absences;
- to provide timely and helpful written feedback to students on any submissions and to assist them to develop solutions as problems are identified;
- to advise students of inadequate progress or work below the standard generally required and to suggest appropriate action;
- to submit marks to the discipline subject coordinator by the feedback date specified in the Subject Outline;
- to attend meetings of the academic unit assessment committee where students' grades are determined.

1.5.2 Responsibilities of Students

Students have the primary responsibility for the timely completion of the project and other assessment tasks. Specific responsibilities are:

- to develop a project proposal and plan for completing the project within the timeframe stipulated elsewhere in this document;
- to maintain regular contact with the supervisor;
- to present required written material to the supervisor in sufficient time to allow for comments and discussions before scheduled meetings;
- to undertake additional work towards their project identified as necessary by the supervisor;
- to leave adequate time at the end of session to account for unpredictable occurrences;
- to accept responsibility for the quality and originality of all submitted work.

1.5.3 Grievances Concerning Supervision

A student who has a question or concern about a decision, act or omission of a member of staff of the Faculty of EIS that affects their project progress should refer to the Faculty of EIS Student Academic Grievance Procedure, which can be found at:

<http://www.uow.edu.au/about/policy/UOW058653.html>

A list of important University websites relating to codes and policies for project students and supervisors can be found in Appendix D.

2. Consultancy Report Style

Section 2 of these guidelines is relevant only to those advised to follow the consultancy report style. The consultancy report is common in engineering practice. While the specific structure, headings and content of the report vary depending on the nature of the consultancy work, there is an overall format that is routinely used to ensure ease of use for the client. This section describes the format to be used and assessment criteria for each assessment. Students who are advised by their supervisor to use the Consultancy report style MUST follow the instructions set out below.

Submission 1 – Investigation Proposal

This package should include the following items.

- Proposed Title
- Aims and objectives
- Proposed work plan and methodology
- *Project log and laboratory book preparation
- *Completed resource form (*If substantial resources are involved approval must be received from the Head of School*)
- *Risk assessment/OH&S form
- *Faculty induction form
- *Risk assessment form for all projects (available from the UoW OHS website)
- *Induction to the local area e.g. laboratory, workshop etc as required
- *Other documents such as Safe Work Procedures (SWP) may be required depending on the project
- *Training as required on all equipment and procedures of medium or above risk

***Some projects will not require these items, the supervisor will advise. A copy of all documents must be filed with the Engineering and Information Sciences Faculty Office.**

Assessment Criteria:

Area	Excellent (>20)	Satisfactory (10-20)	Poor (<10)	Mark
Aims and Objectives	Well formed aims and objectives. Demonstrate a clear understanding of the nature and scope of the project	Reasonable aims and objectives. Demonstrate a developing understanding of the nature and scope of the project	Poorly developed aims and objectives. Demonstrate little understanding of the nature and scope of the project	/25
Project work plan and methodology	Appropriate method/s discussed. Work plan demonstrates clear understanding of the work involved.	Appropriate method/s described. Work plan demonstrates developing understanding of the work involved.	Method/s described are unsuitable. Work plan indicates a lack of understanding of the work involved.	/25
Formatting, Spelling and Grammar	Document is professionally presented with no errors	Document is neatly presented with some spelling/grammatical errors	Document is poorly presented	/25
Work to date	Demonstrated initiative and independence. Has investigated necessary risk assessments/inductions where applicable.	Has followed directions effectively, and maintained correspondence with supervisor. Is aware of necessary approvals/inductions etc. to be completed.	Has shown little effort to date and requires encouragement.	/25
Total				/100

Submission 2 – Interim Report

This report should consist of the following:

- Title page
- Abstract
- Refined aims, objectives and scope
- Preliminary findings including literature review
- Results obtained to date

Assessment criteria:

Area	Excellent (>=15)	Satisfactory (9-14)	Poor (<=8)	Mark
Aims and objectives	Refined aims and objectives. Demonstrate a clear understanding of the nature and scope of the project.	Aims and Objectives still require refinement.	Aims and objectives still unclear and indicate little understanding of the nature and scope of the project.	/20
Research Method	Well developed method, draws from literature and supervisor's guidance.	Well developed method, draws mostly from supervisor's instruction.	Method requires further development, indicates a lack of progress in how to research the topic.	/20
Background research (literature review)	Evidence of substantial background research, effectively utilises multiple, relevant sources.	Evidence of adequate background research, effectively utilises multiple sources, may contain some irrelevant material.	Inadequate background research, contains irrelevant or poorly utilised material.	/20
Research Progress	Preliminary data/findings reported, substantial progress on data analysis	Preliminary data/findings reported	Little data/findings reported	/20
Presentation	Document is professionally presented with no errors	Document is neatly presented with some spelling/grammatical errors	Document is poorly presented	/20
Total				/100

Submission 3 – Draft Final Report

The Consultancy report should follow this general structure:

Title page	see Appendix A.1
Executive Summary (not more than 150 words)	see Appendix A.2
Notation (and units)	see Appendix A.3
Main body of report (4,000 words)	
Acknowledgments	
References	see Appendix B
Appendices	

Main Body of Report

The main body of the report should be divided into a number of sections. Each section may contain a number of sub-sections. The use of sub-sub-sections should be avoided.

There is no one right way to structure a report. The structure will come out of the questions you pose, the methodology you use and the issues you address. Examples of how to structure the report are illustrated in Appendix A.

References

One of two methods of referring to other people's work should be used. The two acceptable methods are:

- (a) by naming the author followed by year of publication;
- (b) by giving the author's name and the corresponding number in the reference list.

For projects that use many references, method (a) is usually most convenient. Otherwise, method (b) is quite acceptable. For method (a), the listing of references should be in alphabetical order of the names of the authors; for each author the listing should be in order of publication dates. For method (b), the references should be numbered in the order in which they are first referred to in the text.

Examples of the methods of referencing and the corresponding styles of listing may be seen in Appendix B.

Appendices

Material, which, if included in the main text, would disrupt the flow of presentation, should be included in the appendices. These include mathematical and numerical details, maps, charts, computer programme listings, work plan, risk assessment and significant numerical materials.

Grammar and English Usage

Particular attention should be paid to spelling, usage of English, and proof reading of the typed manuscript. The body of the manuscript must be written in third person past tense and formal style. Test procedure description/s may be written in alternate person and tense. Students experiencing difficulty should consult with the Learning Development Centre for assistance.

Word Processing

The draft report shall be presented in a legible form.

The specifications given below shall be followed:

- (a) The text of the report shall be in Times Roman 12 font one and a half (1½) line spacing.
- (b) The size of the page shall be ISO paper size A4 (297mm x 210mm), except for illustrative materials such as drawings, maps and printouts on which no restriction is placed.
- (c) The margins on each page shall be not less than 25mm on the bound side and 20mm on the opposite side, 20mm at the top and 20mm at the bottom.
- (d) There shall be a title page showing project title, author's name, degree and date of submission (see Appendix A). No other decoration should be included on this page.
- (e) All pages (including diagrams, tables and appendices etc.) shall be numbered consecutively.
- (f) Header and Footers should contain the page number only and be void of borders. References should not be placed as footnotes.
- (g) Diagrams, tables etc. with proper captions, shall appear on pages close to where reference is first made to them. Photographs should be included as 'jpg' or 'gif' objects in the word

document. Figure and photograph titles should be placed below the figure whereas table titles should be placed at the top of the table.

Submission 4 – Final Report

Students should undertake all corrections specified by the supervisor in the draft report. Shown on the cover should be the name of the School, subject code and name, title of the project, the student's name and number, the month and year of submission and a word count of the main body of the text.

Assessment criteria:

Area	Excellent (>=15)	Satisfactory (9-14)	Poor (<=8)	Mark
Structure and writing style	Logical structure, professional writing style in the third person. All necessary sections as stated in the ENGG456 Guidelines are included. Figures/Tables well integrated.	Logical structure, professional writing style in the third person. May be missing some key sections. Figures/Tables well integrated.	Poorly structured with several key sections missing. Writing style not appropriate for the report format (e.g. informal language). Figures/Tables not appropriately integrated.	/20
Execution	Method appropriate and effectively implemented.	Method appropriate, however several errors made in implementation.	Inappropriate method and/or poorly executed.	/20
Analysis	Results well presented. Analysis is correct and clearly explained. Refers to Literature to support findings.	Results well presented. Analysis either contains minor errors or is not clearly explained.	Results well presented. Contains errors and is poorly explained	/20
Discussion and Conclusions	Discussion of results demonstrates deep understanding of topic. Limitations of work discussed. Directions for further research presented. Conclusion summarises key findings and does not add new information.	Discussion of results demonstrates satisfactory understanding of topic. Limitations of work discussed and/or directions for further research presented. Conclusion summarises key findings.	Discussion of results demonstrates limited understanding of topic. Limited critique of own research. Conclusion summarises key findings.	/20
Referencing, Spelling and Grammar	Consistent referencing using in-text citations and full reference list. Few spelling or grammatical errors.	Some inconsistencies in referencing. Some spelling or grammatical errors.	Inconsistent referencing. Frequent spelling and grammatical errors.	/20
Total				/100

3. Conference Paper Style

Section 2 of these guidelines is relevant only to those advised to follow the conference paper style. Conference papers are an important medium for documenting and disseminating the latest developments in engineering technology and practice. The conference paper is generally academic in style and must present a clear argument supported by appropriate evidence. This section describes the format to be used and assessment criteria for each assessment. Students who are advised by their supervisor to use the conference paper style MUST follow the instructions set out below.

Submission 1 – Research Proposal

This package should include the following items.

- Proposed Title
- Aims and objectives
- Proposed work plan and methodology
- *Project log and laboratory book preparation
- *Completed resource form (*If substantial resources are involved approval must be received from the Head of School*)
- *Risk assessment/OH&S form
- *Faculty induction form
- *Risk assessment form for all projects (available from the UoW OHS website)
- *Induction to the local area e.g. laboratory, workshop etc as required
- *Other documents such as Safe Work Procedures (SWP) may be required depending on the project
- *Training as required on all equipment and procedures of medium or above risk

***Some projects will not require these items, the supervisor will advise. A copy of all documents must be filed with the Engineering and Information Sciences Faculty Office.**

Assessment criteria:

Area	Excellent (>20)	Satisfactory (10-20)	Poor (<10)	Mark
Aims and Objectives	Well formed aims and objectives. Demonstrate a clear understanding of the nature and scope of the project	Reasonable aims and objectives. Demonstrate a developing understanding of the nature and scope of the project	Poorly developed aims and objectives. Demonstrate little understanding of the nature and scope of the project	/25
Project work plan and methodology	Appropriate method/s discussed. Work plan demonstrates clear understanding of the work involved.	Appropriate method/s described. Work plan demonstrates developing understanding of the work involved.	Method/s described are unsuitable. Work plan indicates a lack of understanding of the work involved.	/25
Formatting, Spelling and Grammar	Document is professionally presented with no errors	Document is neatly presented with some spelling/grammatical errors	Document is poorly presented	/25
Work to date	Demonstrated initiative and independence. Has investigated necessary risk assessments/inductions where applicable.	Has followed directions effectively, and maintained correspondence with supervisor. Is aware of necessary approvals/inductions etc. to be completed.	Has shown little effort to date and requires encouragement.	/25
Total				

Submission 2 – Progress Report

This report should consist of the following:

- Title page
- Abstract
- Refined aims, objectives and scope
- Preliminary findings including literature review
- Results obtained to date

Assessment criteria:

Area	Excellent (>=15)	Satisfactory (9-14)	Poor (<=8)	Mark
Aims and objectives	Refined aims and objectives. Demonstrate a clear understanding of the nature and scope of the project.	Aims and Objectives still require refinement.	Aims and objectives still unclear and indicate little understanding of the nature and scope of the project.	/20
Research Method	Well developed method, draws from literature and supervisor's guidance.	Well developed method, draws mostly from supervisor's instruction.	Method requires further development, indicates a lack of progress in how to research the topic.	/20
Background research (literature review)	Evidence of substantial background research, effectively utilises multiple, relevant sources.	Evidence of adequate background research, effectively utilises multiple sources, may contain some irrelevant material.	Inadequate background research, contains irrelevant or poorly utilised material.	/20
Research Progress	Preliminary data/findings reported, substantial progress on data analysis	Preliminary data/findings reported	Little data/findings reported	/20
Presentation	Document is professionally presented with no errors	Document is neatly presented with some spelling/grammatical errors	Document is poorly presented	/20
Total				/100

Submission 3 – Draft Paper

The draft paper should be in the conference paper format, and should include:

- Title and author
- Abstract (150 words or less) – a brief summary of the entire research project. This can follow the general form: What you wanted to find out, how you investigated it, what you found, what is the significance of these findings.
- Notation (if applicable, the supervisor will advise)
- Introduction – The background to your research, what you want to find out and why.
- Literature review – What others have found and how they have investigated this problem or related problems.
- Method – The method or process you used to investigate the problem or research question.
- Results – the important findings/data from your research.
- Discussion – the meaning, significance and impact of your results. This includes the limitations of your research and areas you have identified in need of further investigation.
- Conclusion – a statement summarising what you did, what it means and what you concluded from it.
- References – a list of references you have cited in the paper.

For further details on the title page, abstract and notation, refer to Appendix A.

Grammar and English Usage

Particular attention should be paid to spelling, usage of English, and proof reading of the typed manuscript. The body of the manuscript must be written in third person past tense and formal style. Test procedure description/s may be written in alternate person and tense. Students experiencing difficulty should consult with the Learning Development Centre for assistance.

Submission 4 – Final Paper

Students should undertake all corrections specified by the supervisor in the draft paper. Shown on the cover should be the name of the School, subject code and name, title of the project, the student's name and number, the month and year of submission and a word count of the main body of the text.

Assessment criteria:

Area	Excellent (>=15)	Satisfactory (9-14)	Poor (<=8)	Mark
Structure and writing style	Follows conference paper format. Clear and consistent argument. All necessary sections as stated in the ENGG456 Guidelines are included. Figures/Tables well integrated.	Follows conference paper format. Clear argument. Most necessary sections as stated in the ENGG456 Guidelines are included. Figures/Tables well integrated.	Does not follow conference paper format. Argument unclear or inconsistent. Several key necessary sections missing. Figures/Tables poorly integrated.	/20
Execution	Method appropriate and effectively implemented.	Method appropriate, however several errors made in implementation.	Inappropriate method and/or poorly executed.	/20
Analysis	Results well presented. Analysis is correct and clearly explained. Refers to Literature to support findings.	Results well presented. Analysis either contains minor errors or is not clearly explained.	Results well presented. Contains errors and is poorly explained	/20
Discussion and Conclusions	Discussion of results demonstrates deep understanding of topic. Limitations of work discussed. Directions for further research presented. Conclusion summarises key findings and does not add new information.	Discussion of results demonstrates satisfactory understanding of topic. Limitations of work discussed and/or directions for further research presented. Conclusion summarises key findings.	Discussion of results demonstrates limited understanding of topic. Limited critique of own research. Conclusion summarises key findings.	/20
Referencing, Spelling and Grammar	Consistent referencing using in-text citations and full reference list. Few spelling or grammatical errors.	Some inconsistencies in referencing. Some spelling or grammatical errors.	Inconsistent referencing. Frequent spelling and grammatical errors.	/20
Total				/100

4. Engineering Tender Style

The project tendering process is an important part of engineering practice for many engineering managers. This subject will be an introduction to the research, planning, resource estimation, and writing styles used in preparing tender documents. The Engineering tender style of project requires students to respond to a 'call for tenders', which provides the technical specifications for system to be designed and/or constructed, contractual obligations, work conditions and timeframes. Students will need to study this document carefully in order to put together the tender submission in accordance with its requirements.

Key characteristics of a tender submission are:

- **Focused and to the point:** Make sure key information is clear and obvious in the document
- **Confidence inspiring:** Convince the Client that you are capable of meeting requirements
- **Readable by non-expert:** Tender submissions may be reviewed by non-engineers (managers, accountants, etc.) as well as engineers. Submissions should contain components which appeal to various audiences.
- **Detailed:** Demonstrate that you have considered all aspects of the project with allowances made for the detailed design that will occur once tender is awarded and getting the system commissioned and operational before the statutory deadline.
- **Well costed and with adequate allowance for reasonable profits:** Under-quoting will impact your company profitability, over-quoting may lose the job in favour of a more competitive price.
- **Comprehensive:** Identify what resources are needed, how much they cost, lead times, and prove that the necessary resources are available in the local area or can be imported readily.

Submission 1 - Expression of Interest and Information Exchange Workshop

The Expression of Interest (EOI) is the first response to the call for tenders. EOI's should include:

- Problem definition
- General description of the proposed approach
- Forms or other information as specified in the call for tenders.

Assessment Criteria:

Area	Competitive (>20)	Satisfactory (10-20)	Reject (<10)	Mark
Project Definition and Identification of Key Issues and Risks in EoI	Clearly states project to be developed, identifies issues and risks	Summarises project, but lacks sufficient detail to support proposed approach. Few risks identified.	Definition lacks focus and clarity. Problem not well understood	/25
Proposed Approach in EoI	Clearly summarises proposed approach and approach highly likely to succeed. Clear system arrangement.	Summarises approach, but lacks sufficient detail. Proposal could succeed, dependent on the competition.	Approach unclear and/or unlikely to succeed	/25
Formatting, Spelling and Grammar	Document is professionally presented with no errors	Document is neatly presented with some spelling/grammatical errors	Document is poorly presented	/25
Performance in Information Exchange Workshop	Well prepared, professional, engages in or leads discussion, inspires confidence	Well prepared but may be unable to respond to several questions or has limited involvement in discussion.	Poorly prepared, limited participation in discussion.	/25
Total				

Submission 2 – Project Pitch

The Project Pitch is an oral presentation where students present their proposed approach and preliminary project costing. The pitch should include elements described in the assessment criteria:

Area	Competitive (>=15)	Satisfactory (9-14)	Reject (<=8)	Mark
Problem Definition	Clearly states design problem to be solved	Summarises problem, but lacks sufficient detail to support proposed approach	Definition lacks focus and clarity.	/20
Proposed Approach	Persuasively summarises proposed approach and approach highly likely to succeed	Summarises approach, but lacks sufficient detail or argument is not persuasive. Proposal could succeed, dependent on the competition	Approach unclear, insufficiently researched and/or unlikely to succeed	/20
2 page Tender document summary (distributed at time of presentation)	Concise, clear, relevant, well-formatted, correct grammar, meets page requirements	Clear, relevant, some formatting/grammatical errors, meets page requirements	Main points are lost in complex information provision; unnecessary information; does not meet page requirements	/20
Proposed tender price	Fee highly appropriate to work proposed, adds value, and is well-worked up	Fee appropriate to work proposed	Fees obviously inappropriate, under-justified or overstated	/20
Presentation	Well constructed and delivered, within time limits, inspires confidence in the project	Clear and well organised, within time limits	Poorly organised/planned, unclear, not within time limits.	/20
Total				/100

Submission 3 – Draft Tender Submission

The draft tender submission should include all details set out in the call for tenders document and the final tender submission marking criteria. See below.

Submission 4 – Final Tender Submission

Students should undertake all corrections specified by the supervisor in the draft submission. Shown on the cover should be the name of the School, subject code and name, title of the project, the student's name and number, the month and year of submission and a word count of the main body of the text.

Final Tender Submission Assessment criteria:

Area	Competitive	Satisfactory	Reject	Mark
Structure and writing style	Follows tender document format. Professional writing style that is convincing and confidence inspiring. All necessary sections as stated in the call for tender are included. Figures/Tables well integrated.	Follows tender document format. Professional writing style. Most necessary sections as stated in the call for tender are included. Figures/Tables well integrated.	Follows tender document format. Uses frequent informal language. Several necessary sections as stated in the call for tender are missing.	/20
Proposed approach	Clearly summarises functionality and performance expectations of proposed approach. Approach highly likely to succeed. Well supported by references and industry practice.	Summarises approach, but lacks some detail about functionality and/or performance. Approach will probably succeed.	Approach unclear and/or unlikely meet desired functional and performance requirements.	/20
Risks and controls	Detailed evaluation of potential technical, environmental, social and legal risks, and proposes appropriate controls	Evaluation of potential risks, and proposes at least some appropriate controls	Limited evaluation of potential risks, and proposes inappropriate, or insufficient controls	/20
Proposed Schedule and Evaluation plan	Detailed schedule covering all areas of proposed approach. Realistic and appropriate. Detailed proposal for evaluation metrics.	Schedule covering most areas of proposed approach. Realistic and appropriate. Evaluation metrics identified.	Schedule fails to take account of all aspects of the approach. Timeframes unrealistic Limited evaluation plan.	/20
Budget and Supporting Documentation	Appropriate costing supported by substantial documentation including: Meeting requests, agendas and minutes Reference list Quotes Copies of, or references for materials used in developing the tender Other necessary explanatory information	Appropriate costing supported by some documentation including: Meeting requests, agendas and minutes Reference list Quotes Copies of, or references for materials used in developing the tender Other necessary explanatory information	Inappropriate costing supported by limited documentation.	
Total				/100

5. General Rules

5.1 Submission Deadline Extensions

Any request for an extension must be presented formally through SOLS with appropriate supporting documentation. The student should first discuss with their supervisor and inform the school's subject coordinator that an application has been lodged. This must be submitted at least one week prior to the deadline. This request must clearly indicate that regular contact has been maintained with your project supervisor and that the cause of the delay is beyond the student's control. Include any supporting information.

Generally, extensions will only be granted at the discretion of the school's subject coordinator (based on recommendations from the supervisor) and on the basis of serious medical or compassionate grounds, or other circumstances beyond the student's control. Students who cannot demonstrate that they have applied the best project management and planning strategies will not be granted extensions to deadlines.

Students not completing the project requirements and who do not submit a formal application requesting an extension by the end of week 13 will receive a fail grade.

5.2 Use of Additional Markers

All submissions are marked by the supervisor. In the case where the supervisor awards a "Fail" or a "High Distinction" to the student, a second marker will assess Submission 4. If the second mark differs from the first by less than 10%, an average will be taken for Submission 4. Otherwise, a third marker will assess Submission 4 and all three marks will be referred to the school's assessment committee.

5.3 Forfeit of Early Graduation

Students failing to lodge their Submission 4 report online by Week 14 may not be able to graduate at the scheduled ceremony if the ceremony is directly after the session in which the project was completed.

5.4 Damaged, Overdue or Lost Thesis borrowed from the EIS Central

Students are not allowed to borrow additional theses until outstanding loans have been returned. All borrowed theses must be returned by Week 12 and be returned in good state of repair. The cost of repair or replacement of lost or misplaced theses must be paid to the EIS Central prior to submitting your bound project. Failure to settle outstanding payments by the due date for Submission 4 (Week 14), will result in your results being withheld and graduation eligibility suspended.

5.5 Safety in Laboratories and Field Work

It is imperative that students work safely in the laboratories/field at all times. In particular, substantial footwear must be worn. Thongs and sandals are not acceptable.

When required, a "Risk Assessment Form" relating to your project is to be completed and submitted in Week 2 as part of the project proposal package. This is to identify safety issues relating to your proposed work programme and come to an agreed means of addressing these issues (in discussion with the technical staff responsible for the relevant laboratory area and your supervisor). Your supervisor is to initial this sheet to ensure that he/she is aware of the major safety considerations and the agreed actions to be taken. If there are significant departures from the original programme of work this sheet may need to be updated and a new form submitted.

At the commencement of the project, students should introduce themselves to the technical or professional officer responsible for any laboratory in which they will be working.

If students wish to work in the laboratories outside the hours when technical staff are available, then the following Faculty WORKPLACE SAFETY REGULATIONS must be followed at all times.

- (a) Staff and students must not work alone in:
 - (i) laboratories where chemical substances are handled or housed or where there is a risk of injury from the work being carried out;
 - (ii) in areas where power tools or hand tools that could cause injury are used;
 - (iii) areas where moving machinery is used.

- (b) In all areas other than those detailed above where staff or students work alone, arrangements should be made for other staff to regularly check the welfare of persons working alone. Alternatively, a means of communication to gain assistance must be available.

***The fore-mentioned regulations were resolved by the
University of Wollongong Occupational Health and Safety Committee.***

Letters giving permission to work in laboratories after hours or at weekends may be arranged through your Supervisor (you must be accompanied by another adult at all times). Keys are not issued and students must arrange with EIS Central and Security for access to rooms out of normal working hours (**Note:** give Security notice of at least one day of your requirements).

5.6 Rate of Progress

If you are making insufficient progress during the course of the project, it is important that you do not hesitate to contact your supervisor and the School's subject coordinator. If you need to know how to manage work-related stress, see Appendix C.

5.7 Plagiarism

Plagiarism is the use of another person's work, or idea, as if it is your own. The other person may be an author, critic, lecturer or another student. When it is desirable, or necessary, to use other peoples' material, take care to include appropriate references and attribution - do not pretend the ideas are your own. Be sure not to plagiarise unintentionally. Plagiarism has led to expulsion from the University.

The following examples will help you understand some of the common methods for acknowledging your sources. If you have any questions about these methods, check with your supervisor.

Acknowledging Sources of Quotations.

If you copy part of a sentence, whole sentence(s) or paragraph(s) from an article, a book, lecture notes, an essay, report or any other source, it should be put in quotation marks and the article, book or other source should be referenced using an appropriate method as described in the project manual.

Acknowledging Sources of Ideas

Even if you are not using the exact words of somebody else, it is wrong to use their ideas unless you give appropriate credit.

Paraphrasing

This means taking the ideas of somebody else and expressing them with different words. This must still be attributed and referenced clearly. Since you are using your own words, you do not need to use quotation marks, however, you must make enough changes so that what you have written is distinctly different, and you must acknowledge your source.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as 'resources'), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University.

Further information on plagiarism and acknowledgement practice can be found at:

<http://www.uow.edu.au/about/policy/UOW058648.html>

Appendix A Typical Title Page, Notation and Section Presentation

A.1 Title Page

PROJECT TITLE

By

STUDENT NAME

**BACHELOR OF ENGINEERING
(Discipline)**

from

UNIVERSITY OF WOLLONGONG

FACULTY OF ENGINEERING & INFORMATION SCIENCES

Month (June or November) 202X

Word Count

A.2 Abstract and Executive Summary

An abstract is used in a conference or journal paper, but is normally replaced by an executive summary in a consultancy report. The following defines the requirements of an abstract and an executive summary.

ABSTRACT

(150 words maximum)

The abstract is not just a simple summary of the project. The role of the abstract is to tell readers:

WHAT the research is – what question the research is attempting to answer;
WHY the research was done;
HOW the research was done – what methodology was used;
WHAT the results of the research are;
What the results MEAN.

In effect, the abstract sums up the research.

An example of an abstract from an engineering project can be found at:

<http://www.learning.uow.edu.au/resources/thesis/abstract>

EXECUTIVE SUMMARY

(150 words maximum)

The executive summary is an overview of the main content and findings of the study. It is designed to be read by very busy people (executives, hence the name) who will then decide if it is necessary, or even worth their time, to read the full report. It is often the only part of a report that is read by senior management and therefore it is very important that it contains all essential information that keeps the management team informed and able to make correct decisions based on that report. It may contain the main technical findings, but should be presented in such a manner that non-technical executives will still be able to understand the main thrust of the report.

A.3 Notation

Due to the nature of the problem posed some projects may not require a specific notation section. Projects which have limited or common notation may fall into this category, but even in these cases whatever notation used should be defined at the first instance in the body of the text.

a	length of strip or beam, mm
[A]	transformation matrix for skew strips (Eqn. 5.28)
A,B,C, etc	undetermined coefficients (see Eqn. 2.12)
B	used as suffix for bending analysis
[B _b]	matrix of coefficients relating curvatures to displacement amplitudes
[B _p]	matrix of coefficients relating strains to displacement amplitudes
[C]	coefficient matrix for the displacement function
[D]	plate rigidity matrix
E	modulus of elasticity, MPa
f	individual coefficient of flexibility matrix
[f]	flexibility matrix
[F]	modified flexibility matrix
H,V,T	horizontal, vertical and rotational restraints (redundant reactions)
k	individual coefficient of a stiffness matrix
k _m	$= \frac{m\pi}{\alpha}$
[K]	stiffness matrix
m	the general harmonic term
M	bending moment, kNm
M _x	transverse bending moment (relative to transverse x-axis), kNm
M _y	longitudinal bending moment (relative to longitudinal y-axis), kNm
M _{xy}	twisting moment, kNm
p	used as suffix for in-plane analysis
p	load, kN

Note Units must be presented for all variables

A.4 Presentation of Conference Paper Style

The following is an example of the style of presentation for a paper presented at a conference.

Paper title

I. Surname, University of Wollongong, Australia

ABSTRACT

The abstract should tell the reader: WHAT the research is - what question is the research attempting to answer?, WHY the research was done, HOW the research was done—what methodology was used?, WHAT the results of the research are, and What the results MEAN. In effect, the abstract sums up the research and summarises the separate sections of the paper: the introduction, the methods, the results and the discussion and conclusion.

Introduction

The introduction to a paper can vary depending on the nature of your question and data, the discipline you are writing in, and the general conventions of the conference you are writing for. In general however, an effective introduction fulfils most of the following functions: it establishes the specific field of research and the problem being addressed; it briefly summarises previous research and identifies its limitations or highlights the existing gap in knowledge that the paper is addressing; it introduces the present research; and it may provide an outline of the rest of the paper. When writing for a conference, it is useful to look at its previous proceedings to identify the general conventions of writing within the field.

Body heading

Sub-heading 1

Be sure to use the opening sentences of our sections and paragraphs effectively so that your reader can very easily grasp the logic of your argument. Use the supporting sentences of a paragraph to present the evidence and explanation. Evidence may be presented in diagrammatic form, as shown in Figure 2. This figure

*** Figure inserted soon after referenced, with caption **below** the figure***

Figure 1 Figure caption

Sub-heading 2

Remember to clearly state your main argument/ point in the opening sentence of the section. Numerical and other data may be shown in the form of a Table. The Table is not intended to speak for itself, however, so your textual description and analysis should precede it.

Table 1 Sample of recorded delay data

*** Table inserted soon after referenced, with caption **above** the table***

Additional sections as required

Further sub-sections

Note the use of font size, bolding and other formatting to highlight section headers, sub-sections and text. A numbering system may also be used. The conference organising committee will usually require a particular style to be used.

Discussion

The function of a discussion section is to: interpret the results presented in the results section; and discuss them in relation to your research question and to the results of previous research in the field. Of course, to present any discussion about results from previous research, you must already have introduced this research in your literature review. Discussion sections also often include sub-sections on issues arising from the study, or that detail the implications of the research.

Conclusion

The conclusion might begin by reiterating: the aims of the research; the results of the research; the implications of the results. Its main function, though, is to: make generalisations arising from the discussion of the results; look at the implications of the findings for practice, accepted theoretical models/ paradigms and indicate the overall importance of the research to the field; and in some papers, make recommendations for future practice, or future research.

Acknowledgements

References

Be sure to pay attention to the format of your referencing. Whether you are using the numerical system (IEEE) or the author-date system (Harvard), you can find the relevant guidelines on the University Library page at <http://www.library.uow.edu.au/resourcesbytopic/UOW026621.html>

A.5 Presentation of Consultancy Report Style

The following is an example of the style layout of a consultancy report.

Title Page

See Appendix AD.1

Executive Summary

Start on a new page. See Appendix A.2

Notation

See Appendix A.3

Main Body Content

Of course each project will be different. Some may be heavily experimental while others are theoretical. Section 1 would be common to the majority of reports with other sections being determined based on the focus of your report. A suggested order of headings for an experimental project would be

1. Introduction

This section will contain aims and objectives of the project as well as a short literature review of any key information available in the literature.

2. Experimental Test Equipment

3. Experimental Methodology

4. Experimental Data and Analysis

5. Modelling and Simulation

6. Conclusions and Discussion

Acknowledgements

The acknowledgements should be on a separate page and thank key people for their specific assistance throughout the duration of the project.

References

See Appendix B

Appendices

These are to be included on the CD only

Appendix B Method of Referencing and Reference Listing

B.1 Reference by Naming Authors

The following is an extract from a published work, which may serve as an example when the author's name is placed in the sentence:

"The flexibility approach adopted by Mortarjemi and Van Horn (1969) is useful only in determining the load-distribution characteristics for some specific form of box-bridge construction. Other methods of analysis due to Wright et al. (1968, 1968a), Richmond (1969, 1969a, 1971) and Kristek (1970) are approximate in assumptions and in applications and are generally suitable for single-cell boxes only.

Space-frame programs have also been used, e.g. by Smyth and Srinivasan (1973), in the analysis of a box-girder bridge deck. However, the simulation of boxes by space frames is not capable of predicting local effects and the method has proved expensive in use".

If the sentence does not use the author's name but the content requires referencing the following method should be used:

At Idaho Falls, a 1.6m thick soil layer was capable of storing and removing 370 mm of precipitation which corresponds to the maximum annual precipitation over a 40 yr. period (Anderson et al. 1993).

The corresponding reference listing should follow the styles below:

(a) Articles

Author's name (surname first followed by initials (title case)); year of publication in brackets; full stop; title of article; full stop; title of journal (abbreviated in conventional manner as desired); comma; volume; comma; part of number; comma; month of publication (if applicable); comma; numbers of first and last pages; full stop.

(b) Books and Reports

Authors' names in title case (surname first followed by initials); year of publication in brackets; full stop; title of book; full stop; series number (if applicable); comma; publisher/s; comma; place of publication (if necessary); full stop.

A portion of typical reference list by author is shown below:

Gere, J.M. and Weaver, W.J.R (1965). Analysis of framed structures, Van Nostrand.

Goldberg, J.E. and Leve, H.L. (1975). Theory of prismatic folded plate structures. IABSE Publications, Vol. 17, No. 5, pp. 59-86.

Hamada, M. (1966). Statical deflection of parallelogram plate with clamped edges subjected to uniform pressure. Trans. Japan Soc Aero Space Sci., 9 November, p. 84.

Iyengar, K.T.S. and Srinivasan, R.S. (1967). Clamped skew plates under uniformly distributed load. Jnl. Royal Aero. Soc., 71, February, pp. 139-140.

Johnston, S.B. and Mattock, A.H. (1967). Lateral distribution of load in composite box girder bridges. Highway Research Board Washington, D.C.

B.2 Reference by Numbers

This method of referencing is widely used in writing journal articles. The following is an example:

"Cable structures are becoming increasingly popular because of their economical constructional advantage and high strength capacity. However, the cable material typically used in modern construction exhibits linear stress-strain characteristics over only a portion of its useable strength. For ultimate load analysis, the resulting formulations should consider material nonlinearity. Some attention has been given to nonlinear material effects in static cases (1-3, 5-7, 13), but little attention has been devoted to dynamic cases (8, 9, 11, 12)."

It should be noted that the authors may also be names in this system as can be seen in the following paragraph.

"With the advances being made in digital computer capabilities, simulations of discrete digital time sequences have become an important engineering tool for both design and analysis. Digital time sequence simulations of random waves for ocean engineering applications have been developed by Smith (1) and applied by the Jones (5) for random wave force predictions. Alternative techniques for simulating a discrete random time sequence have been developed by Shvetsov and Shorin (10) and by Shinozuka (8) with an application to coastal sediment transport problems under random waves by Wang and Liang (13). In addition, dynamic testing systems, which are utilized to compute complex-valued transfer functions by the Frequency-sweep method, may be driven by a digital simulation of a discrete random time sequence that has been synprojected from a Fast Fourier transform (FFT) algorithm and is capable of providing excitations of the more desirable periodic random type (see for comparison, Ref. 6)."

For this method the styles of listing are very similar to those given in E.1 except that:

- (i) the authors' names only need to be in upper and lower case;
- (ii) for articles, year of publication should be inserted just after the month of publication;
- (iii) for books and reports, the year of publication should appear last;
- (iv) title of article (in upper and lower case) should be in double quotations and starts and ends with a comma;
- (v) title of journal or book should be underlined.

The following are two examples:

1. Wehausen, J.V. and Laaitone, E.V., "Surface Waves," Encyclopedia of Physics, Vol. 9, 1960, pp. 475-479.
2. Gere, J.M. and Waver, W.J.R., Analysis of Framed Structures, Van Nostrand, New York, 1965.

B.3 Electronic Material

Students are advised to refer to the requirements of referencing electronic sourced material. Useful information on **Citing Electronic Resources** is available at the University of Wollongong Library website. <http://www.library.uow.edu.au/helptraining/guides/citing.html>. Additional material is available from the Learning Development Centre.

Appendix C Managing Work Related Stress

As you no doubt realise, the final year project and writing up of the project is a major task to undertake - by far the biggest single piece of assessable work you will tackle in the course of your degree. It is also quite different in kind from the work involved in the other subjects.

In the other subjects, with the setting of tutorials, continuous assessment tasks and so on, students are led step by step through the required material. In contrast, when it comes to the final year project, ***the student is primarily responsible for the progress of the project*** - setting of goals, timetables and monitoring rate of achievement of these tasks. A very significant part of the project is the effective "project management" aspects associated with meeting the various deadlines set out in the previous section. A particular challenge in this subject is to maintain progress whilst still meeting the assessment requirements of the remaining subjects.

Consequently in grappling with this project it is not surprising that most, if not all, students will feel some degree of stress at some stage during the project. This is true to some extent with any assessable task, but given the magnitude of this task may reach higher levels - and in some cases may impede the successful completion of the project.

There are several points that may assist with regard to the handling, and hopefully relieving of this stress:

- Stress, to some degree, is a common part of the effort involved in tackling a major and significant task of this sort. You will not be the odd one out if you are experiencing this.
- If you are a "bright" student with a good academic record you are not immune - you are likely to have set your personal standard for the project at a challenging level - and you need to be careful that it is not too challenging (regular interaction with your supervisor should help).
- Stress free project completion is invariably associated with good project management and disciplined time management - including the ability to prevent project work being swamped by the requirements of your other subjects.
- The student is basically the "project manager" for the project - not the supervisor - and is responsible for seeing that the project gets done. However you should draw on your supervisor's experience and guidance regularly throughout the project. Regular meetings with your supervisor (weekly or fortnightly) are perhaps the best way to ensure this. The best way of relieving stress in the project is to catch the causes early and solve them. *A problem shared is a problem halved - therefore make it part of your project management plan to organise regular meetings with your supervisor.*
- If there are problems that you do not appear to be able to resolve in conjunction with your supervisor, you should discuss them with the coordinator of the final year project subject.

The University has a counselling service, located in the UniCentre building, to assist students. A significant part of their work involves assisting students in coping with the stress associated with tackling this type of major project. Be aware of and make use of this resource sooner rather than later if you feel stress levels building. There are techniques and strategies you can use to help you not only in this task but also in your future career.

Appendix D Further Information

The following is a list of relevant university websites that relate to project:

Code of Practice - Honours:

<http://www.uow.edu.au/about/policy/UOW058661.html>

Code of Practice - Teaching and Assessment:

<http://www.uow.edu.au/about/policy/UOW058666.html>

Student Charter:

<http://uow.edu.au/student/charter>

Authorship Policy:

<http://www.uow.edu.au/about/policy/UOW058654.html>

Code of Practice - Research:

<http://www.uow.edu.au/about/policy/UOW058663.html>

Academic Integrity Policy:

<http://www.uow.edu.au/about/policy/UOW058648.html>

Academic Consideration Policy:

<http://www.uow.edu.au/about/policy/UOW060110.html>

UOW Workplace Health and Safety Policy

<http://www.uow.edu.au/about/policy/UOW016894.html>

Intellectual Property Policy:

<http://www.uow.edu.au/about/policy/UOW058690.html>

Research Ethics Committees and Guidelines:

<http://www.uow.edu.au/research/ethics/UOW172918.html>

Plagiarism:

<http://www.uow.edu.au/student/services/ld/students/UOW021315.html>