**Department of Civil Engineering**

**King Saud University**

**Guidelines for CE 497 (Capstone Design Project) Report**

Prepared by the Capstone Design Project Committee:

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**Preface**

This short document has been prepared to ensure there is adequate harmony among supervisors when reviewing their students’ capstone design project reports. Supervisors are recommended to follow up with their students throughout the semester to make sure their reports satisfy the requirements included herein. While the presented report structure is tentative and may vary depending on the project nature, it reflects the necessary contents of a technical report and ensures the inclusion of three specialties, design alternatives/scenarios and conclusions and recommendations; hence mimicking the assessment criteria in the report evaluation forms. This document presents guidelines for both supervisors and students and consists of the following items:

1. Sample Table of Contents
2. Formatting requirements
3. Cover and prefatory pages
4. **Sample Table of Contents (TOC)**

TABLE OF CONTENTS

1. Project Backgroud, Objectives and constraints #

1.1 Background #

Subsection 1.1.a #

Subsection 1.1.b #

1.2 Objectives #

1.3 Constraints #

1. Available Data, design criteria and specifications #

2.1 available data (if applicable) #

2.2 design criteria #

2.2.1 Structural design criteria (e.g. max. allowable strength, loads…etc.) #

2.2.2 Hydraulic design criteria (e.g. max. allowable velocity, min. and max. pressure) #

2.3 specifications #

1. Major specialty design (e.g. Structural Design) #

3.1 methodology #

3.2 Design Alternative 1 #

3.2.1 Alternative 1 description #

3.2.2 Analysis and results #

3.3 Design Alternative 2 #

3.3.1 Alternative 2 description #

3.3.2 Analysis and results #

3.4 Design alternative 3 #

3.4.1 Alternative 3 description #

3.4.2 Analysis and results #

1. Minor specialty #1 design (e.g. hydraulic design) #

4.1 estimation of energy losses #

4.2 Design Scenario 1 #

4.2.1 Scenario description (e.g. max. daily demand and fire flow) #

4.2.2 Analysis and results #

4.3 Design scenario 2 #

4.3.1 Scenario description (e.g. max. hourly demand) #

4.3.2 Analysis and results #

4.4 Design scenario 3 #

4.4.1 Scenario description (e.g. intermittent supply with storage tanks) #

4.4.2 Analysis and results #

1. Minor specialty #2 design (e.g. construction management) #

5.1 Project schedule #

5.2 Cost estimation #

1. conclusions and recommendations #
2. references #
3. appendices #

8.1 appendix A #

8.2 Appendix b #

**List of Figures**

**List of Tables**

1. **Formatting requirements**
   1. **Main body of the report**

The main body of the report should include the necessary information relevant to the project. Unnecessary information; e.g. design charts, lengthy records of data …etc., should be included in the relevant Appendix, while referring to them in the main text.

* + 1. Margins

Top margin: 50 mm for the first page of the chapter and 25 mm thereafter

Bottom margin: 25 mm

Left margin: 40 mm

Right margin: 25 mm

* + 1. Font, style and point sizes (refer to the sample TOC in item 1)

All typed text in the whole report will be 1.5 times spaced in Times New Roman. The style and point size vary as follows:

**Main section title** (**bold and regular**): 14

**Second-level section title (bold and regular)** and section text (regular): 12

*Subsection-title* (*italics*) and sub-section text (regular): 12

* + 1. Length

The length of the main report body must be within the range of 50-75 pages.

* + 1. Figures, tables, photos and equations

Numbering of figures, tables, photos and equations will follow their section number; e.g. Fig. 2.1 will be the first figure in Section 2. Similarly, Table 3.2 will be the second table in Section 3, and so on. Titles of figures will be placed below them, while table titles will be placed above them.

* 1. **Appendices**

The Appendix is comprised of items which do not comfortably fit into main text body of the report: oversized drawings/tables/graphs, detailed computations, and computer-generated data. Label each appendix category sequentially as A, B, C…etc.; the page number format should be as A-1, A-2, etc.

* 1. **References**

All sources of information in the report are to be referenced within the report and listed in a bibliography. The references are to be in alphabetical order by author, then numbered consecutively. Once numbered, the reference number [in brackets] is inserted within the report, at the end of the source. Resources include published articles, books, technical reports, World Wide Web page, conference papers …etc.

The format for listing different types of references is given below. Note the use of italics and quotes. (Within the bibliography, remember to number the references after first having alphabetized them by author; the number [in brackets] is used within the report to identify the source).

**Books:**

Last name of author(s) and first name or initials, or name of organization, *Title of book (in italics),* Edition (if applicable), Place of publication (city), Name of publisher, Year of publication, first and last page of reference

Example:

Ricketts, [J. T.,](https://www.amazon.com/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Jonathan+T.+Ricketts&search-alias=books&field-author=Jonathan+T.+Ricketts&sort=relevancerank) Loftin, M. K. and Merritt, [F. S.,](https://www.amazon.com/s/ref=dp_byline_sr_book_3?ie=UTF8&text=Frederick+S.+Merritt&search-alias=books&field-author=Frederick+S.+Merritt&sort=relevancerank) *Standard Handbook for Civil Engineers*, 5th Edition, New York, The McGraw Hill Companies, 2004, pp. 20-89.

**Periodicals:**

Last name of author(s) and first name or initials, or name of organization, Title of article in quotation marks, *Title of periodical in full and set in italics*, Volume, No. (if available), Year of publication, first and last page of reference.

Examples:

Rendon-Herrero, O., “Including Failure Case Studies in Civil Engineering Courses,” *Journal of Performance of Constructed Facilities*, ASCE, Vol. 7, No. 3, 1993, pp. 181-185.

**From the INTERNET**

Last and First name of Author(s), "title of entire work", electronic address, date document accessed.

Examples:

Texas A&M University, Introducing Ethics Case Studies Into Required Undergraduate Engineering Courses, [Civil Engineering Ethics Site](https://ethics.tamu.edu/)**.** <https://ethics.tamu.edu/case-studies/>

Delatte, [N.,](https://ascelibrary.org/author/Delatte%2C+Norbert) Case Studies for Civil Engineering Educators, *Structures Congress 2005*

<https://doi.org/10.1061/40753(171)236>

1. **Plagiarism?**

* **Plagiarism means:**
  + copying words or ideas from someone else as one's own
  + to steal and pass off (the ideas or words of another)
  + to present as new and original an idea or product derived from an existing source
  + to use (another's production) without crediting the source

In other words, plagiarism is an act of fraud. Plagiarism is considered academic dishonesty and a breach of ethics.

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* **How to Avoid Plagiarism:**

Most cases of plagiarism can be avoided:

* + by citing sources and acknowledging that certain material has been borrowed and
  + by providing the necessary information to find that source.

1. **Cover and prefatory pages**

Supervisors are requested to provide their students with the cover and prefatory pages included thereafter. The font, style and point sizes of these pages should be kept as given in this document.



**King Saud University**

**College of Engineering**

**Civil Engineering Department**

**CE 497 – Group xx**

**Project Title**

Design Team:

Student name (I.D.: xxxxxx)

Student name (I.D.: xxxxxx)

Student name (I.D.: xxxxxx)

Supervisors:

Prof. xxxx (specialty)

Dr. xxxxx (specialty)

*Submitted in Partial Fulfillment of the Requirements for the*

*B.Sc. Degree in Civil Engineering*

Hijri date, corresponding to Gregorian date

*Riyadh, Kingdom of Saudi Arabia*

Our vision is to be a world-class department in civil engineering through educating students, and advancing research and professional practice

We hereby approve the report entitled:

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Prepared by:

1-

2-

3-

Supervisors:

1. Prof. Signature
2. Dr. Signature

Examiners:

1. Prof. Signature
2. Dr. Signature

Date: -------------------

*Riyadh, Saudi Arabia*