MedTech
Mediterranean
Institute of Technology

Engineering PROGRAM

CAPSTONE PROJECT GUIDE – CLASS OF 2025

Proposal, Project, and Presentation

Academic year 2024/2025

January 2025

DISCLAIMER

Students are required to know and comply with the policies, procedures, guidelines, and information set forth in the handbook. This Handbook is correct at the time of publishing in 3 December 2024. The School reserves the right to amend any policy at any time.

Students are expected to have read and understood the content of this guide.

Table of Contents

1. ACRONYMS

AR:	Academic Reader
IEEE:	Institute of Electrical and Electronics Engineers
AS:	Academic Supervisor
PS:	Professional Supervisor
CP:	Capstone Project Proposal
PD:	Program Director
CCD:	Career Center Director
CPC:	Capstone Project Coordinator

2. KEY CONTACTS AND RESOURCES

2.1. Capstone Project Coordinator

Capstone Project Coordinator Walid Ben Haj Othmen walid.benhajothmen@medtech.tn

2.2. Program Directors

Program Director for the academic year 2024-2025 are:

Renewable Energy	Lamia Bouaziz	lamia.bouaziz@medtech.tn
Software Engineering	Salma Hamza	salma.hamza@medtech.tn
Computer Science	Noura Baccar	noura.baccar@medtech.tn
License in Computer Science	Nadia Ben Youssef	nadia.benyoussef@medtech.tn
Master Program	Ghassen Kilani	ghassen.kilani@medtech.tn

2.3. Career Center

Career Center Director Hela Chaari hela.chaari@smu.tn

2.4. Capstone Project Resources

Students have 2 major sources of information:

- Moodle: it contains documents related to the Capstone Project: Capstone Project Guide and required forms for the Capstone Project.
- Career Center site: it contains information about the Capstone Project and jobs posting.
- Capstone project course on Moodle for all submission.

3. CAPSTONE PROJECT OVERVIEW

3.1. Program Mission & Objectives

3.1.1. The Mission

The capstone project course is open to students in all majors. The course is designed to train students, with the opportunity to incorporate them into full-time employment upon graduation or help them continue their higher education. Students will be granted 21 credits when successfully complete their work term.

3.1.2. Requirements

To enroll in the capstone project course students must be in good academic standing and fully accepted in their specialization.

3.1.3. Objectives

The capstone project course objectives are:
- Produce competent and contemporary engineers.
- Develop an analytical approach for problem solving and decision-making.
- Enhance and foster enthusiastic and persuasive writing and oral communication skills.

3.1.4. Identifying capstone project Opportunities

Regardless of students' academic year or previous experience, there are steps to finding a capstone project, and resources and support frameworks available to make an informed choice. Students must be proactive and prepared.
- Begin capstone project search by setting up an appointment with a Career Center Staff to discuss their options and explore different career paths:
    - Develop a strategy for identifying and applying for potential capstone projects and learn how to make use of SMU Career Connections;
    - Consult the resources available in the Career Center.
- Meet with the PD to discuss your interest in finding a capstone project in your area of interest.

Students should use their "network" of family, friends, classmates, faculty, former employers, and others to help with ideas for possible capstone project.

3.1.5. Project Description

The capstone project requires a deep exploration, analysis and critique of a chosen Engineering issue/topic. The analytical process should begin with a state-of-the-art situation analysis of the company, its industry, and its market. Students must relate their placement tasks and learning outcomes to the topic of their study. Hence, a review of the relevant literature and current thoughts in the chosen area should lead to an investigation of that issue.

The investigation can take many forms such as, but not limited to:
- Pilot study involving limited data collection.
- Quantitative or qualitative analysis of primary or secondary data.
- Consultancy project/engineering plan.

The project may be a critical review in an area of special interest to the student, including a review of the theoretical foundations, the value bases, or the evidence regarding its effectiveness. It may also be an empirical study (qualitative and/or quantitative), which is exploratory in nature.

Lastly, the project should demonstrate academic excellence and should be of publishable quality. It should advance knowledge in the chosen field.

3.2. Deliverables

Workload: The capstone project requires a minimum of **500 hours** of placement to be approved. The report requires on average a minimum of 7 hours of work per week.

	Activity	Document submission Type	Submission to	Deadline
	Capstone project search			
	Start date			January 1, 2025
	Capstone project proposal		Moodle	January 31, 2025
	Capstone project Agreement		Moodle	February 15, 2025
	Capstone project Agreement		Career Center	February 15, 2025
	Supervision form		Program Coordinator	February 15, 2025
	Progress report		Moodle	Defined by the AS, the AR and the CPC.
	Final supervised version of the report		Moodle	June 5, 2025 * September 5, 2025 ** November 30, 2025
	Capstone project certificate		Career Center	May 31, 2025
	Employer evaluation		Moodle	May 31, 2025
	Approval for Defense		Moodle	June 10, 2025 * September 10, 2025 ** December 5, 2025
	Final Presentation			June 1-25, 2025 * September 5-25, 2025 ** December 1-25, 2025

IMPORTANT: Students failing to meet the deadline or submitting a report with a high rate of similarity and plagiarism or a poor-quality Report will incur up to 10% penalty on their final grade. This will be automatically applied if submissions on Moodle show any delay. "Respect of Deadlines" is included as a weighty criterion in the evaluation form of the final grade.

3.3. Grading

The breakdown of the final grade is as follow:

Rubric	Weight
Project Progress and General Attitude	25 %
Quality of Capstone Manuscript	50 %
Quality of Presentation	25 %

* *Students failing to meet the deadline or submitting a poor-quality Report will incur up to 10% penalty on their final grade.*

4. DUTIES OF THE SUPERVISOR AND STUDENTS' RESPONSIBILITIES

Both the student and the academic supervisor are responsible for arranging regular meetings for consultation and discussion of the student's progress. The frequency of such meetings will vary, although meetings should be arranged more frequently when the student is in the course of completing the final project report. A supervisor should be reasonably accessible for meetings requested by his/her student.

4.1. Duties of the Student

4.1.1. Student Registration and Extensions

- Students must meet all deadlines, satisfy requirements, and adhere to regulations associated with their graduate program as specified by MedTech. Students must consult the academic calendar and the program calendar.
- Students must maintain continuous registration and be in good academic standing at the school until completion of the project.
- In case the supervisor is not satisfied with the progress of the student and judges that the student would not be able to meet the deadline, they should inform the PD who should call for a meeting with the student and the supervisor within 7 days in order to see what can be done to correct the situation before it is too late.
- If the student cannot complete the degree requirements within the established timeline, the student must apply for a time extension:
    - The first-time extension is granted almost automatically.
    - The second time extension is not guaranteed. The student has to provide valid reasons for not finishing on time.
    - Extension deadlines are: June, September, and December.
- All time extensions must be approved by an academic committee.
- Student applying for time extension have to pay time extension fees.

4.1.2. Writing the Final Report

The student should:

- Produce a report that is the student's own work and that meets MedTech's standards for style and quality.
- Conform to the principles of professionalism in writing the report, acknowledging assistance, materials and/or data provided by other scholars, including fellow students, faculty and staff.
- Develop and edit successive drafts of the project report that incorporates the suggested revisions.
- Comply with the MedTech Honor Conduct and be knowledgeable of the penalties for academic dishonesty as outlined in the MedTech regulations (refer to the academic guide).
- Meet the school regulations and standards of academic requirements of a project, as well as, all the program requirements, including course requirements.
- Be aware of and adhere to the school policy on the ownership of intellectual property.

4.2. Duties of the Academic Supervisor

The AS (Academic Supervisor) should:

- Be accessible to the student – 30 contact minutes per week.
- Ensure that the student's work conforms to standards of scholarly performance within the discipline
- Participate in, and independently evaluate student performance in the final project defense.
- Examine thoroughly all written material relevant to the project submitted by his/her student and provide constructive suggestions, in writing, for improving the work when necessary.
- Provide comments within one week of receipt of the submitted materials.
- Assist students to develop a work plan with deadlines to help them to meet all graduation requirements in a timely manner.
- Be knowledgeable and comply with the school's regulations, procedures, and standards to which a project is required to conform and ensure that the student is also aware of those requirements.
- Ensure that suitable arrangements are in place in a timely manner regarding the final presentation and the submission of the final report.
- Maintain consistent communication with the PD.

4.3. Duties of the Academic Reader

The AR (Academic Reader) should:

- Have adequate time to assume the responsibilities associated with serving on a student's capstone project Committee.
- Be accessible to the student.
- Ensure that the student's work conforms to standards of scholarly performance within the discipline.
- Review the report drafts as provided by the student and provide feedback in a timely fashion.
- Participate in, and independently evaluate student performance in the final capstone project defense.
- Provide comments within one week of receipt of the submitted materials.

4.4. Duties of the Program Director

The PD (Program Director) should:

- Keep constant communication with the help CCD and the AS about the students' progress.
- Communicate deadlines and revisions with to students.
- Allocate AS and AR to students.
- Approve, with the AS, students' proposal.
- Record all intermediate and final grades related to the capstone project.
- Participate in the final capstone project defense – when possible.
- Be accessible to the AS and the student to solve any issue related to the capstone project process.

4.5. Guidelines Governing the Student-Academic Supervisor Relationship

The student should:

- Choose, in consultation with the PD, a project for which adequate resources are available and which is acceptable to the AS.
- Maintain regular communication with the AS.
- Inform his/her AS and the PC of any prolonged absence, including business trips planned by the host company, and keep his/her supervisors informed of how they can be contacted.
- Give serious consideration to and respond to advice and criticism provided by the AS.
- Communicate with his/her AS on the progress and anticipated submission dates of the project. Students must work towards meeting any agreed upon deadlines and must inform their academic supervisor of any anticipated delays.
- Inform his/her AS in case the project's subject changes for any reason during the placement period. The student should come up with a new (modified) proposal and submit it to the PD. The student has to fill out a new online Proposal Form.

4.6. Duties of the Career Center Director

The CCD (Career Center Director) should:

- Help identify capstone project opportunities to MedTech students.
- Help students connect with companies offering opportunities.
- Help in defining capstone project steps, student role and responsibilities to support learning situations and career goals.
- Liaise between MedTech and the industry.
- The CCD plans, organizes, and delivers a variety of career development programs including: on-campus recruiting, career fairs, career development workshops, class presentations and individual career counseling.
- The CCD will act as liaison to the Dean and academic departments heads to coordinate quality career services within the university.

5. CAPSTONE PROJECT PROCESS & DELIVERABLES

5.1. Capstone Project Process

Please refer to **Figure 1** for more details. All forms and documents are available on the Intranet.

5.1.1. Capstone Project Agreement

Students must download the Capstone Project Agreement from the Moodle, print and fill out 3 copies, and submit it within the first 2 weeks of placement to the Career Center. The Career Center requires formal contact information of the Human Resource representative and their business card. This is mandatory. A basic Q&A is provided in the Appendix.

It is important that students scan and submit 1 pdf copy on Moodle under the Capstone Project course.

DELIVERABLE: Submission of the Capstone Project agreement on Moodle (PDF copy – no phone picture is accepted), 3 signed paper copies of the Capstone Project Agreement, and the business card HR manager.

5.1.2. Capstone Project Proposal

Students must complete a Capstone Project Proposal. It must be formally approved before proceeding with any data collection or other work on the Capstone Project Final Report. The Capstone Project proposal must consist of a clear statement of purpose, and a description of the objectives of the suggested study, and the motivation/rationale for choosing the topic of the Capstone Project report. The proposal should be 300 words long.

The Capstone Project Proposal should include the following:

- Project Title: The title should reflect the general idea or the topic that will be studies; maximum 50 characters (including space)
- Statement of Purpose.
- Objectives of the study.
- Methodology to be used.

DELIVERABLE: An online Capstone Project Proposal Form must be completed and approved by the PD. Project Title: maximum 50 characters

5.1.3. Academic Supervision

Each project proposal is submitted to an Academic Supervisor (AS) for acceptance (by the PD and the AS). The final approval is made within 1 week after the submission date.

IMPORTANT: The Academic Supervisor is selected by the student and the PD.

The PD and the AS will provide feedback to the student on the quality and completeness of the proposal. The PD and the AS will take one of three actions on the proposal:

- Approve the proposal.
- Approve the proposal, pending changes.
- Not approve the proposal, indicating the need for further development and re-submission for evaluation.

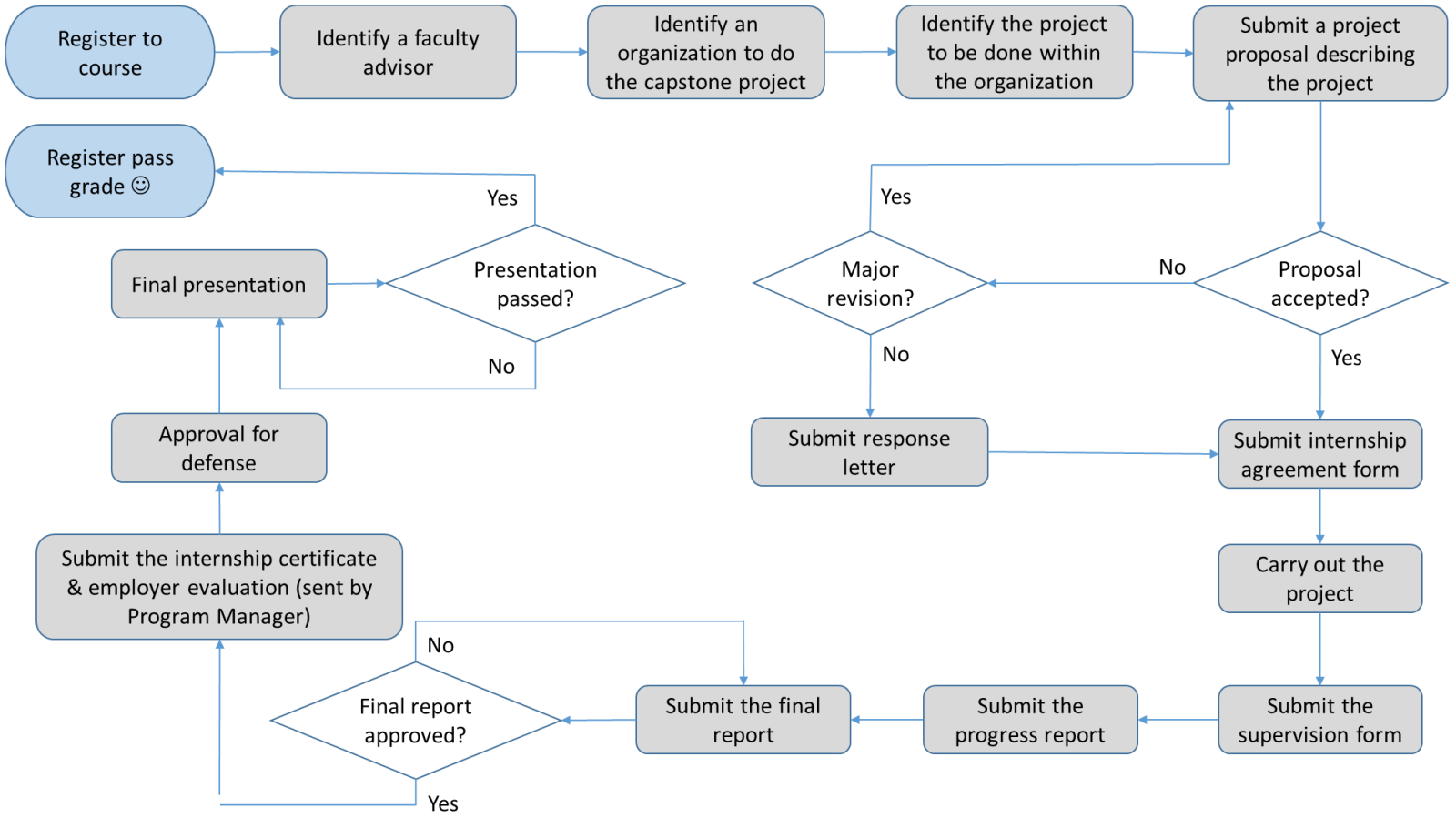

Figure 1: Capstone Project Process 2024-2025

5.1.4. Deliverables

	Activity	Document submission Type	Submission to	Deadline
	Capstone project search			
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	Capstone project proposal		Moodle	January 31, 2025
	Capstone project Agreement		Moodle	February 15, 2025
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*** These deadlines are naturally defined for the session of June. Deadlines annotated with (*) refer to the session of September and those with (**) refer to the session of December. Students cannot defend their capstone project if they didn't respect the deadlines of the desired session. "Respect of Deadlines" is included as a weighty criterion in the evaluation form of the final grade.**

5.1.5. Progress Reports

Progress reports are meant to check if the student is on the right track. It also helps students to prepare for the final report deposit.

The AS and the AR should receive the Progress report. The role of the AS is to provide guidance and advice on the student's work. They shall ensure that the report has followed the proposed methodology, applied appropriate analytical tools, and achieved its objectives according to the proposal. The AS will make sure that the student is on the right track. The AR Evaluate the progress of the student in the capstone project and take into consideration this evaluation when grading the student.

IMPORTANT: Students failing to meet the deadline or submitting a poor-quality Report will incur up to 10% penalty on their final grade.

5.1.6. Pre-Defense Report and Approval for Defense

Lastly, the 1st draft of the complete report must be sent to the AS within the defined deadlines. This step is necessary to ensure that the report is defendable. They will take one of the following actions based upon their evaluation of the student's report:

- Approve the final report
- Approve with changes
- Not approve the final report for (i) poor content and analysis and/or (ii) poor format.

IMPORTANT: It is mandatory to format the report as per MedTech requirements. Failing to do so will lead to the non-approval of the report.

If the report is not approved, the student may apply to a 1st time extension, and pay the corresponding time extension fees. If the report is approved, student shall receive feedback on their report.

Once the AS approves the final supervised version, the student should send the report to the AR.

If the report is approved and after the defense, students will get a presentation grade that account for 30% of the final grade. Further, both the AS and the AR will provide their written comments/feedback on the report on the presentation day. Students have 1 week to revise their report as per AS and AR comments. This second Final Report must be **approved** by the AS, and the AR **prior** to sending it for printing (PDF copy).

IMPORTANT: If students fail to submit the post defense revised version by June 30, 2025, they will go for time extension.
There are 3 presentation sessions: June, September, and December.
Extension fees are cumulative.

5.1.7. Defense: Presentation

An approval for Defense is required to hold the Capstone project defense.
Capstone projects defenses are held during the reserved sessions periods as indicated previously in the 5.1.4 section.
The defense is held within 10 to 20 days after receiving the report by the AR.

The presentation will take approximately one hour (inclusive of a question/answer session):

- 30 minutes of presentation,
- 20 minutes of questions, and
- 10 minutes of Jury deliberation.

Slides number is capped to 30 slides.

Notice of presentation along with 1-page page summary must be circulated seven (7) days in advance of the session. Students are encouraged to use audiovisual aid/handouts to facilitate their presentations.

The student should provide to the jury members hard copies of the capstone report at least 48 hours before the defense.

The presentation Jury is composed of a President, the AS, the AR, and the PS. Student should ask the PS to provide a letter before the defense if he can't assist the defense. Lastly, student have to fill out a satisfaction survey about their capstone project experience.

The professional supervisor is NOT part of the Jury.

5.1.8. Final Deposit and Report Printing

Final copies of the Report, following examination and approval, must be deposited following these guidelines:

- Send one (1) final PDF electronic copy of the report to the PD and the Program Coordinator.
- Hand in 1 signed copy of the following pages to the Program Coordinator:
    - Approval (page 2)
    - Declaration (Page 3)
    - Work term release (page 4)
- An abbreviated title, the student's name and the year of submission, the program and the concentration should appear on the spine running lengthwise from the top. The front and rear cover should be left blank.
    - This should not take more than 70 characters, spaces included. Title length maxed at 50 characters.
    - Example: John Drag (2013) **"This a Sample Report of the Capstone Project", MedTech, Renewable Energy**.

IMPORTANT: The final deposit is not authorized until all revisions of the AS and the AR have been approved.

6. CAPSTONE PROJECT REPORT REQUIREMENTS

6.1. Instruction for Formatting the Report

The following report guidelines[1] MUST be used by all students (more details in the Appendix).

IMPORTANT: If the report is not properly formatted in the pre-defense deposit, it will not be approved for defense.

6.1.1. General Requirements

- The *generic* structure of the report is provided in the appendix. It includes, but is not limited to (see Report Format word file for more details):
    - Title page
    - Approval page
    - Declaration
    - Work term release form
    - Abstract
    - Acknowledgments
    - Table of contents
    - List of tables
    - List of figures
    - Executive summary
    - Body of the report
    - References
    - Appendices

6.1.2. Paper length and Word Count

The report should be 10000 words to 17000 words long depending on the discipline:

- 20% Company Description
- 30% Literature Review and Methodology
- 50% Results, Findings and Recommendations

IMPORTANT: The word count limits are mandatory.

The report, unless otherwise specified, is to be submitted typewritten on A4 white paper.

[1] Adapted from: http://www.gradschool.purdue.edu

6.1.3. Spacing

- All text vertical spacing must be set with 1.5 line space; except for the following situations:
    - All headers must be separated by a space of 2 lines single-spaced from a paragraph of a previous section and 1 single-spaced line from a previous heading.
    - Paragraphs must be separated by a space of 1 single-spaced line.
    - First paragraph following a header must have a 1 single-spaced line with its heading.
- First word of the first paragraph must have an indent of 1.27cm.
- No spacing between the caption and the figure, table, or equation.

6.1.4. Paragraph Management

- Avoid ending pages with one-line paragraphs or with only the first line of text from a paragraph continuing on the following page (these are commonly called "orphans"). Paragraphs ending pages of text must contain at least two lines of text or be moved to the top of the following page.
- New pages of text must not begin with the last line of paragraphs carried over from previous pages (these are commonly called "widows").
- All headings 1 must start on a new page.

6.1.5. Font

Font and font size: Century Gothic, 10 pts.

6.1.6. Margins

- All margins are set to 2.5cm.
- All material in the document must fit within the margins.
- The document must be justified.

6.1.7. Pagination

- The title page is not numbered.
- Preliminary pages (e.g., approval; declaration; work term release form, etc.) are numbered consecutively in lowercase Roman numerals.
- Text and all Reference pages, including appendices, are numbered consecutively in Arabic numerals beginning with 1 on the first page of text.
- Pagination should be placed in the lower right corner.
- Page numbers must be in Century Gothic, 10 pts. .

6.1.8. Headings

All titles, headings, and body text must be written using "Century Gothic". Use "sentence case" to capitalize each first letter of each word in the title.

Title 1: century gothic, 16 pts, capital letters, bold, black colored, 1st level numbering

1. CENTURY GOTHIC

Title 2: century gothic, 13 pts, bold, black colored, 2nd level numbering

1.1 Century Gothic

Title 3: century gothic, 13 pts, bold, black colored, 3rd level numbering

1.1.1 Century Gothic

Title 4: century gothic, 12 pts, bold, italicized, black colored, no numbering

Century Gothic

6.1.9. Figures

- All figures must be centered.
- A figure's caption must be centered and placed below the graphic.
- Captions are boldfaced, using Century Gothic, 9 pts.

6.1.10. Tables

- All tables must be centered.
- A table's caption must be centered and placed above the table.
- Captions are boldfaced, using Century Gothic, 9 pts.

6.1.11. Equations

- All equations must be centered.
- An equation's caption must be centered and placed above the equation.
- Captions are boldfaced, using Century Gothic, 9 pts.

6.1.12. Additional Resources

Titles/Headings Style
http://office.microsoft.com/en-us/word-help/style-basics-in-word-HA010230882.aspx?CTT=1

Numbering
http://office.microsoft.com/en-us/word-help/number-your-headings-HA010282072.aspx?CTT=1

Captions (figures and tables)
http://office.microsoft.com/en-us/word-help/add-captions-in-word-HA102227021.aspx?CTT=1

6.2. Capstone Project Learning Outcomes

The following sections are intended to help engineering student list the learning outcomes related to their project.

A quality learning objective, written in behavioral terms should address **WHEN** the objective should be met, **WHAT** should be done, **HOW** the objective is to be accomplished and **SHOW HOW** the successfully completed objective is to be measured (**EVALUATION**)[2]:

> *December 3 to December 10 (**when**) I wrote complete job descriptions (**what**) for my two immediate supervisors, using existing records and personal interviews (**how**) and I typed the results in a report form (**evaluation**).*

General Classification

ANALYZE quantitative data, statistical data or human social situations
APPRAISE or evaluate programs, services or performance of individuals
ARRANGE social functions, events or meetings between people
ASSUME responsibility for varied duties and job function
CLASSIFY and sort information into categories
COMPILE statistical data, facts or information
COMPLETE in-house training course, correspondence studies, etc assigned by supervisor
COORDINATE events involving groups of people
CONDUCT special meetings and/or training sessions, etc
CREATE new systems or processes
CROSS-TRAIN with different coworkers or supervisors
MAKE DECISIONS or alternatives within a certain situation
DEMONSTRATE the ability to perform certain job functions previously unknown
DELEGATE tasks to others or give responsibility to others on a work team
DESIGN new systems, forms, plans, processes and/or duties and responsibilities
DEVELOP a working knowledge of various job processes and/or duties
EVALUATE a program or judge the performance of a process or individual
EXAMINE by administering written tests
EXPLAIN by justifying one's action or making obscure ideas clear to others
EXPRESS feelings to individuals or to groups
FIND and research information from various sources or people that can be helpful
IDENTIFY an industry relevant topic and research question within the engineering domain
IMPLEMENT new plans, procedures or ideas within the business organization
IMPROVE skills in shorthand, typing, office machines, etc
INCREASE level of output, number of contacts, amount of sales
INITIATE personal contacts or new ideas and ways of doing things
INTERPRET other languages or meaning of statistical data
INVESTIGATE by seeking the underlying causes of a problem
LEARN the techniques of operating new equipment, new procedures at the job site
MANAGE the work of others or the processing of information
MEMORIZE data, lists, etc, that may be necessary on the job
ORGANIZE certain tasks or information and arrange it in an interpretable form
PERSUADE by influencing others to see your point of view
PLAN and organize a project
QUESTION to obtain information or clarification

[2] Adapted from: Source: http://www.tmcc.edu

READ and/or review company or product information
RESEARCH by extracting information form libraries, archives, etc
REVIEW by reassessing the effects of a program or performance of an individual
REVISE present policies, procedures or method of operation
SCHEDULE meetings, conferences, etc
TRAIN to perform in newly assigned job responsibilities
WRITE correspondence, reports, memos, programs, sales presentations, promotional brochures or sales manuals

Bloom's Taxonomy

Definitions	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Bloom's Definition	Remember previously learned information	Demonstrate an understanding of the facts	Apply knowledge to actual situations.	Break down objects or ideas into simpler parts and find evidence to support generalizations	Compile component ideas into a new whole or propose alternative solutions	Make and defend judgments based on internal evidence or external criteria
Verbs	Arrange Define Describe Duplicate Identify Label List Match Memorize Name Order Outline Recognize Relate Recall Repeat Reproduce Select State	Classify Convert Defend Describe Discuss Distinguish Estimate Explain Express Extend Generalized Give example Identify Indicate Infer Locate Paraphrase Predict Recognize Rewrite Review Select Summarize Translate	Apply Change Choose Compute Demonstrate Discover Dramatize Employ Illustrate Interpret Manipulate Modify Operate Practice Predict Prepare Produce Relate Schedule Show Sketch Solve Use Write	Analyze Appraise Breakdown Calculate Categorize Compare Contrast Criticize Diagram Differentiate Discriminate Distinguish Examine Experiment Identify Illustrate Infer Model Outline Point out Question Relate Select Separate Subdivide Test	Arrange Assemble Categorize Collect Combine Comply Compose Construct Create Design Develop Devise Explain Formulate Generate Plan Prepare Rearrange Reconstruct Relate Reorganize Revise Rewrite Set up Summarize Synthesize Tell Write	Appraise Argue Assess Attach Choose Compare Conclude Contrast Defend Describe Discriminate Estimate Evaluate Explain Judge Justify Interpret Relate Predict Rate Select Summarize Support Value

Source: http://inside.mines.edu/

6.3. Referencing – IEEE Style

Introduction

Generally, only references cited in the text are included in the references list. Students must use IEEE guidelines to cite and list their references. "IEEE" stands for The Institute of Electrical and Electronics Engineers. IEEE style is a numbered referencing style where citations are affiliated to numbers, given between square brackets, in the text of the work,. The full corresponding reference is listed at the end of the document, next to the corresponding citation number.

Overview of the Institute of Electrical and Electronics Engineers, IEEE Publication Style

This guide provides an overview of the IEEE citation style. It is based on the version 11.12.2018 of the Institute of Electrical and Electronics Engineers reference guide published in 2018. It provides basic explanations and examples for the most common types of citations used by students. For additional information and examples, refer to the *Publication Manual* that can be found on this link on which this overview is based: https://ieeeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf

6.3.1. IEEE style - In Text Citations

When using your own words to refer indirectly to another author's work, you must identify the original source. A complete reference must appear in the Reference List at the end of your paper. As previously mentioned, the IEEE style is a numbered referencing style, where citations are numbered in the order of appearance. This leads the reader to a full the list of references at the end of your work. Each citation number should be enclosed in square brackets on the same line as the text, before any punctuation, with a space before the bracket as indicated in this example:

- "... as shown by Brown [4], as previously stated."

Once a source has been cited and associated to a number, this same number is re-used for all subsequent citations to the same source.
Note that Page numbers should be mentioned within citations where material is directly quoted or the citation refers to a specific part within the source, such as a detail difficult to find. The page numbers are given within the square brackets, for example [1, p. 3].

6.3.2. IEEE style - References

As previously mentioned, at the end of your work, all the sources cited in your text should be listed with details in a section headed References, in numeric order. Theses listed References must follow IEEE formatting guidelines. Your reference list should allow the reader of your work to identify and find the referred material. In IEEE style your reference list should be formatted as follow:

- Align references left
- Single-space each entry, double-space between every new entry
- Place number of entries at left margin, enclose in square brackets
- Indent text of entries

Citations/references with multiple authors

in general, while you are citing your sources in the text, you do not need to mention the authors by name, just use the numeric citation in square brackets. However, if you prefer or you need to mention the name of the author(s) in the text then if the number of authors of a given citation is three or more, you can abbreviate them using 'et al.' similarly to this example: During their research, Fan, et al. [4] discuss lasers in detail. However, in the reference list at the end, you always

give the authors' names and you can use 'et al.' to abbreviate only if the number of authors is six or more.

Reference examples
The way the document is referenced in the reference list at the end of the work depends on the type of the document. Below are examples of several common types of document you might want to reference. For each type of document you can find a suggested standard format for the reference followed by examples.

- **Book**

[Ref number] Author's initials. Author's Surname, Book Title, edition (if not first). Place of publication: Publisher, Year.
Example:
[1] I.A. Glover and P.M. Grant, Digital Communications, 3rd ed. Harlow: Prentice Hall, 2009.

- **Book chapter**

[Ref number] Author's initials. Author's Surname, "Title of chapter in book," in Book Title, edition (if not first), Editor's initials. Editor's Surname, Ed. Place of publication: Publisher, Year, page numbers.
Example:
[2] C. W. Li and G. J. Wang, "MEMS manufacturing techniques for tissue scaffolding devices," in Mems for Biomedical Applications, S. Bhansali and A. Vasudev, Eds. Cambridge: Woodhead, 2012, pp. 192-217.

- **Electronic Book**

[Ref number] Author's initials. Author's Surname. (Year, Month Day). Book Title (edition) [Type of medium]. Available: URL
Example:
[3] W. Zeng, H. Yu, C. Lin. (2013, Dec 19). Multimedia Security Technologies for Digital Rights Management [Online]. Available: http://goo.gl/xQ6doi Note: If the e-book is a direct equivalent of a print book e.g. in PDF format, you can reference it as a normal print book.

- **Journal article**

[Ref number] Author's initials. Author's Surname, "Title of article," Title of journal abbreviated in Italics, vol. number, issue number, page numbers, Abbreviated Month Year.
Example:
[4] F. Yan, Y. Gu, Y. Wang, C. M. Wang, X. Y. Hu, H. X. Peng, et al., "Study on the interaction mechanism between laser and rock during perforation," Optics and Laser Technology, vol. 54, pp. 303-308, Dec 2013. Note: the above example article is from a journal which does not use issue numbers, so they are not included in the reference.

- **E-Journal article**

PDF versions of journal articles are direct copies of the print edition and they can be cited as print journals. [Ref number] Author's initials. Author's Surname. (Year, Month). "Title of article." Journal Title [type of medium]. volume number, issue number, page numbers if given. Available: URL
Example:
[5] M. Semilof. (1996, July). "Driving commerce to the web-corporate intranets and the internet: lines blur". Communication Week [Online]. vol. 6, issue 19. Available: http://www.techweb.com/se/directlinkcgi?CWK19960715S0005

When you are compiling your reference list you may need to abbreviate journal titles: You can find a list of abbreviations for several journals on the following link: https://www.elsevier.com/__data/promis_misc/BMCL_Abbreviations.pdf

- **Conference papers**

[Ref number] Author's initials. Author's Surname, "Title of paper," in Name of Conference, Location, Year, pp. xxx.
Example:
[6] S. Adachi, T. Horio, T. Suzuki. "Intense vacuum-ultraviolet single-order harmonic pulse by a deep-ultraviolet driving laser," in Conf. Lasers and Electro-Optics, San Jose, CA, 2012, pp.2118-2120. Standard abbreviations may be applied to the title of the conference. For a table of abbreviations you can use the following link: http://www.ieee.org/documents/ieeecitationref.pdf

- **Reports**

Generally, the name and location of the company or institution are mentioned after the author and title when citing technical reports. The report number and date are given at the end of the reference. The volume number can be given after the year:
[Ref number] Author's initials. Author's Surname, "Title of report," Abbreviated Name of Company., City of Company., State, Report number, year.
Example:
[7] P. Diament and W. L. Luptakin, "V-line surface-wave radiation and scanning," Dept. Elect. Eng., Colombia Univ., New York, Sci Rep. 85, 1991.

- **Patents**

[Ref number] Author's initials. Author's Surname, "Title of patent," Country where patent is registered. Patent number, Abbrev of Month Day Year.
Example:
[8] J. P. Wilkinson, "Nonlinear resonant circuit devices," U.S. Patent 3 624 125, July 16 1990. Note: Use "issued date" if several dates are given.

- **Standards**

[Reference number] Title of Standard, Standard number, date.
Example:
[9] Shunt power capacitors, IEEE standard 18-2012, 2013.

- **Theses/Dissertations**

[Ref number] Author's initials. Author's Surname, "Title of thesis," Designation type, Abbrev. Dept., Abbrev. Univ., City of Univ., State, Year.
Examples:
[10] J. O. Williams, "Narrow-band analyser," Ph.D. dissertation, Dept. Elect. Eng., Harvard Univ., Cambridge, MA, 1993.

- **Datasheets**

[Ref number] Author's initials. Authors Surname, "Title of Datasheet," Part datasheet, Publication date [Latest revision date].
Example:
[11] Texas Instruments, "High speed CMOS logic analog multiplexers/demultiplexers," 74HC4051 datasheet, Nov. 1997 [Revised Sept. 2002].

- **Online Documents**

Generally, this concerns documents that are e-only.
[Online] after the document title. If there is no specific document title you can place this after the document number (e.g. patent number). At the end of the reference add: Available: URL. See below for an example of an online patent:
Example:
[12] M.R. Brooks, "Musical toothbrush with adjustable neck and mirror," U.S Patent 326189 [Online], May 19 1992. Available: http://goo.gl/VU1WEk

- **Websites**

For websites it is preferable to include as much as possible of key information. A corporate author or Anon can be used if the author name of the website is not indicated. It is also allowed to use the title of the site for anonymous

[Ref number] Author's initials. Authors Surname. (Year, Month. Day). Title of web page [Online]. Available: URL

Examples:

[13] BBC News. (2013, Nov. 11). Microwave signals turned into electrical power [Online]. Available: http://www.bbc.co.uk/news/technology-24897584

[14] M. Holland. (2002). Guide to citing internet sources [Online]. Available: http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html

APPENDIX 1: Q&A

1) **How can I get my capstone project letters?**
   - Log on to your course on Moodle.
   - Fill in a document request form.
   - You will be able to receive your letter at the Career Center after 48H from filling the form.

2) **What is the deadline for submitting my capstone project agreement?**
   - The deadline to submit your capstone project agreement is 2 weeks after your start date at the hosting company.
   - You should Scan the document and upload it on Moodle.

3) **What happens if I am unable to submit my capstone project agreement to the career center on time?**
   - You should make a capstone project request stating the reasons behind your inability to submit your agreement to the career center.
   - Send an e-mail with your scanned capstone project agreement.
   - Bring the capstone project agreement by the time you finish conducting your project.

4) **What happens if the hosting company asks to keep some information unrevealed in my report?**
   - MedTech respects the privacy of hosting organizations, you need to mention the request of the hosting organization in your report to specify which information you are unable to enclose.

5) **How many copies of my capstone project agreement should I print and sign?**
   - The number of copies needed to be signed are 3 copies (excluding the final report submission).
   - The capstone project agreements need to be signed by the company representative, the career center, and the student him/herself.
   - In case you sign one original copies, print two other papers for yourself and the hosting organization, the career center only keeps the original agreement.

6) **Can the career center help me find a capstone project or a job offer?**
   - The career center forwards all internships/capstone project opportunities and job offers via email.
   - Please make sure that you fill the requirements mentioned by the hosting company.
   - If you succeed to find a capstone project or a job offer that matches your career perspectives, send your resume/CV to the career center director: hela.chaari@smu.tn
   - The resumes sent need to meet the standards of a qualified CV or they will not be processed to the potential employers.

APPENDIX 2: REPORT STRUCTURE

- **Approval**
- **Declaration**
- **Work Term Release Form**
- **Abstract**
- **Keywords**
- **Acknowledgements**
- **Table of Contents**
- **List of Tables**
- **List of Figures**
- **List of Equations**
- **Executive Summary** *The executive summary is concise and outlines key issues and recommendations that you believe management should follow to address the selected topic. Consequently, you will be unable to write the executive summary until you have completed the entire report.*

Introduction *The purpose of an introduction is to formulate purpose statements and research- or investigation questions. It contextualizes your work and enables the reader to understand and appreciate your objectives.*

- **Company context**
    - ***Description of the company*** *Describe where your capstone project was carried out (company, department, position(s) held, etc.). You might also describe such things as how your organization was structured, the work environment, etc.*
    - ***Mission and Objectives***
    - ***Industry structure***
    - ***Market Structure***
- **Capstone Project Topic** *Describe your capstone project topic here.*
    - ***Tasks and Responsibilities*** *Summarize your capstone project goals, activities, accomplishments, specific Tasks/assignments that you did alone or with others, and staff meetings that you take part in and your specific role/contribution in each meeting. In addition, describe the key learning's you took away from your capstone project. What company initiatives you observed, etc.)?*
    - ***Challenges and Obstacles*** *Describe any challenge/obstacles you faced during your capstone project, and how you coped with them.*
- **Literature Review** *Relate your capstone project topic to current literature or a theoretic framework.*
- **Design/Methodology** *choose strategies and methods in concordance with research- or investigation questions, then discuss, motivate and explain these choices: what did you use, a qualitative or quantitative research methods? Did you administer a questionnaire or interview people? Any field research conducted? How did you collect data? Did you utilize other libraries or archives?*
- **Results and Findings**
- **Discussion and Recommendations** *This section should clearly and concisely state the issue facing the organization as substantiated by your analysis of the situation. Fundamental to determining the key issue is a statement of consequence regarding the potential impact for the firm if nothing is done (Explain the consequences if the key issues are not addressed by management). This should be directly related to the current situation of the company and the results/findings of your study.*
- **Conclusions** *The conclusion brings everything together. A stimulating and informative conclusion leaves the reader informed and well-satisfied.*

- **References** *Generally, only references cited in the text are included in the references list; however, an occasional exception can be found to this rule. For example, supervisors may require evidence that students are familiar with a broader spectrum of literature than that immediately relevant to their study/report. In such instances, the reference list is called a bibliography. All material must be referenced using the IEEE style. All sources must be acknowledged in your reports each time you use a finding from someone's work. For more details:* https://ieeeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf
- **Appendix** *The following materials are appropriate for an appendix: company specific data/information, market data, material that is additional to the information supplied in the main write up.*

APPENDIX 3: EXAMPLE OF A FORMATTED DOCUMENT

2. Literature Review

Over the last five years, technological changes have altered the structure of the music industry. The introduction of new information and communication technologies throughout the 1990's and 2000's has facilitated new distribution channels through which consumers can access music. Music in a digital form is easily distributed via the Internet and reproduced via readily available software and home computers.

2.1. Models

2.1.1. Online music

Existing studies trying to explain and model on-line digital consumer music procurement (legal and illegal) will be examined as a means to explain consumer behavior as a means to suggest additional research to further explore this issue. These studies have shown that retail prices, the costs to copy, and convenience are factors that influence music copying behavior or attitudes towards music copying. Furthermore, these studies also indicated that social norms or pressures are significant influences and that music copiers are indifferent to artist or record company losses. Some of these studies suggest an "irrationality" to not copy music. Finally, music appears to some as within the overall public domain with little or no legislative enforcement.

Table 1: Online Music
