Republic of the Philippines
**CEBU TECHNOLOGICAL UNIVERSITY**
ARGAO CAMPUS
Ed Kintanar Street Lamacan Argao, Cebu Philippines
**Website:** http://www.argao.ctu.edu.ph **E-mail:** ctu.argao@yahoo.com
Phone No.: (032) 485-8290/485-5109 loc 1700 Fax. No.: (032) 4858-290

Management System
ISO 9001:2015
TÜVRheinland
CERTIFIED
www.tuv.com
ID 9108652629

QS STARS
RATING SYSTEM
★ ★ ★

# CAPSTONE PROJECT and RESEARCH MANUAL

## Guidelines and Policies

# Table of Contents

**Vision of the University**

A premier multidisciplinary-technological university.

**Mission of the University**

The University shall primarily provide advanced professional and technical instruction for special purposes, advanced studies in industrial trade, agriculture, fishery, forestry, aeronautics, and land-based programs, arts and sciences, health sciences, information technology, and other relevant fields of study. It shall also undertake research and extension services and provide progressive leadership in its areas of specialization (Sec. 2 of RA 9744)

**Goal**

The University shall produce scientifically and technologically oriented human capital equipped with appropriate knowledge, skills, and attitudes. It shall likewise relevant research strengthen linkages with the industry, community, and other institutions and maintain sustainable technology for the preservation of the environment.

**Outcomes**

- ➢ Relevant, effective, and quality education for sustainable growth
- ➢ Access to quality education for the underprivileged students
- ➢ Relevant research for economic, environmental, and sustainable development
- ➢ Expanded community engagement
- ➢ Effective and efficient management of resources

**Goals of the College**

1. Outcomes-based and quality-oriented Information and Communications Technology instruction delivered to student-customers;
2. Information and Communication Technology market kept more satisfied;
3. Holistic development of faculty members and students in Information and Communication Technology

**Objective of the Programs**

Equip students with equitable ICT skills and proficiencies required by industry with integrated research and extension capabilities in addressing the ever-changing demands in their individual lifetime opportunities.

**Research Priority Areas**

The National Higher Education Research Agenda (NHERA 2) taking into consideration the new challenges and opportunities posed by the rapid developments in ICT, emergence of new fields like nanotechnology, globalization, and the knowledge-based economy. The following research priority areas and based from the NHERA 2 (CHED, 2009), were adopted by the University and the College of Computer, Information and Communication Technology as follows:

➢ Basic research to generate new knowledge and advance the frontiers in the various disciplines;
➢ Research in aid of policy/plan formulation and implementation particularly in education;
➢ Research aimed at producing/adapting education technologies and developing education programs in cutting edge fields such as nanotechnology, biotechnology, ICT, materials science, etc.
➢ R & D in aid of national/regional development

**IT Research or Capstone Project**

In CHED's CMO. No. 25 S. 2015, IT Research or Capstone Project is required for Bachelor of Science in Information Technology (BSIT) program. This project function as terminal project requirements that would only demonstrate a student's comprehensive knowledge of the area of study and research methods used but also allow them to apply the concepts and methods to a specific problem in their area of specialization. The proposed computerized system may fall under, but not limited to, any of the following categories:

**Software Development**
a) Software Customization (Free and Open Source Software (FOSS) is encouraged)

      b) Information System Development for an actual client (with pilot testing)

      c) Web Applications Development (with at least alpha testing on live servers)

      d) Mobile Computing Systems

**Multimedia Systems**
      a) Game Development

      b) e-Learning Systems

      c) Interactive Systems

      d) Information Kiosks

**Network Design and Implementation and Server Farm Configuration and Management**

**IT Management**
      a) IT Strategic Plan for sufficiently complex enterprises

      b) IT Security Analysis, Planning and Implementation

## CCICT IT Research or Capstone Project

In the CCICT-BSIT curriculum, Capstone Project is also known as a Capstone and Research. This subject is the most critical evaluation of whether the previous knowledge and skills learned by the students from his/her freshman year to senior year are applied and integrated. The students are encouraged to propose a Technology Start-Up Idea for a capstone project that is not existed or proposed by previous proponents/researchers. The proposed capstone project may fall under, but not limited to, any of the following categories:

- Cloud Computing (Saas, PaaS, IaaS)
- Social Media
- Internet of Things (IOT)
- Web Applications
- Mobile Apps (iOS, Android)

The proposed capstone project (Technology Start-Up Idea) may address the following areas, but not limited to:

- Agriculture
- Commerce
- Disaster management
- Education
- Environment
- Governance
- Health care
- Home
- Livelihood
- Media and Entertainment
- Lifestyle/ People-on-the-Go
- Power and Energy
- Social Sciences
- Telecommunications
- Tourism
- Transportation

## Research Courses/Subjects

In the CCICT-BSIT, the Research or Capstone Project is divided into two (2) - Capstone Project and Research 1 which is focused on the planning, analyzing, and designing of the proposed study/project; and Capstone Project and Research 2 which is more focused on the development and implementation of the same study/project.

## Capstone Project Teacher

The Capstone Project Teacher is one handling /facilitating a class of 20 to 30 students in one or more Capstone Project Research 1 and 2 courses/subjects. She/he is responsible for: orienteering the students on what to expect of the course/class, conducting meetings, organizing research-related events, scheduling Proposal Hearing and/or Oral Defense proceedings, and delivering grade. By default, he/she is considered a panel member in graded proceedings.

**Duties and Responsibilities of the Subject Teacher**

- Announce the Research or Capstone Project Areas or theme approved by the dean to the students;

- Conduct general/specific meetings with the students to discuss the Capstone Project Policies, Standards, Guidelines, and Deliverables, and to allow the students to raise and clarify issues;

- Facilitate sound communication line(s) for and between the students, faculty members, advisers, panel members, and Dean.

- Select a Proposal Hearing and/or Oral Defense panel for each team;

- Schedule Capstone Project activities, such as the deadlines of deliverables and Proposal Hearing and Oral Defense sessions.

- Post schedules, Proposal Hearing and Oral Defense guidelines, requirements guidelines, and other announcements;

- Furnish every member of the Proposal Hearing and Oral Defense panel with all the necessary Capstone Project documents before the scheduled Proposal Hearing or Oral Defense respectively;

- File at least one copy of the Proposal Hearing and Oral Defense panel's evaluation (including revisions) and the Revised and Approved Deliverables at every stage of the Capstone Project.

- Submit collated grades of students under his/her section for that term.

## Capstone Project Team Composition

Each Capstone Project Group must consist of three (3) or four (4) members who will take on at least one of the following roles:

**Hustler - Project Manager**
- *The Hustler optimizes marketing strategies in promoting the product or output.*
- The person in authority to manage a Capstone Project from start to finish. This includes leading the planning and the development of all Capstone Project deliverables.

- Responsible for the budget, work plan, and all Project Management Procedures (eg. Scope management, issues management, risk management, etc. )
- Responsible for the success of the entire activity.

### Hacker - Software Engineer, Software Tester

- *The hackers will be the ones to build/develop the system or application.*
- The person who designs, writes, and test computer programs.

### Hipster – Systems Analyst/ Database Designer/UI Designer

- The person who checks that all parts of the system are coordinated based on a complete and traceable Software Requirements and Specifications (SRS)
- The person who makes sure that the storyboard and the database design are complete and robust.
- *The hipster is in charge of making sure that there is a logical connection between the design and user requirements.*

## Team Regrouping

Regrouping is allowed if less than three (3) members of the group remain. Should this happen, the group may be disbanded and members of this affected group may join other groups as long as the maximum number for each group is followed. However, if the remaining member(s) decide(s) to continue with his/her/their project, regrouping may not apply but with the consent o f both the Project and the Subject Advisers, and the Dean. Revision of the scope may then be an option. The title/topic to be pursued will then be decided among the team members, the Project and the Subject Advisers, and the Dean.

## Project Advisers

Any full-time regular faculty member of the CCICT can be a project adviser as long as the project falls under her area of expertise or specialization. If full-time instructors are insufficient, part-time teachers can be assigned as a project adviser as long as he or she is teaching in the college.

**Duties and Responsibilities**

**Project Adviser**

1. Ensures that the study proposed by the students conforms to the standard of the College and has immediate or potential impact on the research thrust of the university.

2. Guides the research/project students in the following tasks while in the proposal stage:

   a. Defining the research problems/objectives in clear and specific terms

   b. Building a working bibliography for the research

   c. Identifying variables and formulating hypothesis, if necessary

   d. Determining research design, population to be studied, research environment, instruments to be used and the data collection procedures

3. Meets the team regularly (at least once a month) to answer questions and help resolve impasses and conflicts.

4. Points out errors in the development work, in the analysis, or in the documentation. The adviser must remind the proponents to do their work properly.

5. Reviews thoroughly all deliverables at every stage of the project, to ensure that they meet the College's standards. The adviser may also require his/her project proponents to submit progress reports regularly.

6. Recommends the proponents for proposal hearing and oral defense. The project adviser *should not* sign the Hearing Notice (for Proposal Hearing and Oral Defense) if he/she believes that the proponents are not yet ready for proposal hearing and/or oral defense. Thus, if the proponents fail in the defense, it is partially the adviser's fault.

7. Clarifies points during the proposal hearing and oral defense.

8. Ensures that all required revisions are incorporated in the appropriate documents and/or software.

9. Keeps informed of the schedule of project activities, required deliverables and deadlines.

10. Recommends to the project defense panel the nomination of his/her project for an award.

11. As a project adviser, he/she is responsible to be:

    a. A provider

b. An encourager

c. A dictator

d. A pushy boss

e. A connector

f. An employment agency

## Adviser Reassignment

In the event that the Adviser needs to leave the team, for valid reasons assessed by the Dean, such as long-term Leave of Absence and unavoidable circumstances among others, the group/team may be reassigned to another adviser. This may happen from Capstone Project and Research 1 and Capstone Project and Research 2.

## Capstone Project Panel Composition

The capstone Project panel is composed of Chairman, Members, and Adviser.

1 Facilitator (Subject Teacher)

1 Project Adviser

2 Panel Members (assigned by the Subject Teacher)  1 Content Expert (the

Dean/Chair or her/his Representative)

1 Chairman (Dean or her/his Representative)

## Panel Reassignment

In the event that the chairman or any panel member needs to leave/excuse the proceedings, for valid reasons assessed by the Dean, such as Leave of Absence, Official Business, and unavoidable circumstances among others, the group/team may be reassigned to another equally competent panelist. This may happen from Capstone Project and Research 1 and Capstone Project and Research 2.

## Capstone Project Timeline

The BSIT Research or Capstone Project shall be completed within two (2) semesters (Capstone Project and Research 1 and Capstone Project and Research 2).

**Capstone Activities**

The following are the important activities in the course of Capstone Project and Research 1; and Capstone Project and Research 2:

**Capstone Project and Research 1**

1.  Enrollment
2.  Orientation
3.  Pitch Deck Preparation
4.  Lightning Pitch
5.  Proposal Manuscript Writing
6.  System Planning
7.  System Analysis
8.  System Design
9.  Proposal Hearing
10. Startup Contests Application (if available)

**Capstone Project and Research 2**

1.  Enrollment
2.  Orientation
3.  Capstone Project Advisers' Consultation
4.  Manuscript Writing
5.  System Planning and Analysis
6.  System Designing
7.  System Development
8.  System Testing
9.  Oral Defense
10. Startup Contests Application (if available)

## Grading System

There will be different sets of grading sheets/rubrics to be employed for Capstone Project and Research 1 and Capstone Project and Research 2. It will consist of grading variables like group grade, individual grade, adviser's grade, and even project management evaluation.

### Capstone Project and Research 1

| Adviser's Grade | |
|---|---|
| Attendance / Behavior / Professionalism | 5 |
| Role Commitment/Contribution | 15 |
| | |
| **Panels' Grade:** | |
| Team (Manuscript / System Design) | 50 |
| Individual (Oral Presentation) | 30 |
| **Total** | **100** |

### Adviser's Grade

The adviser will grade each member of the team based on behavior, professionalism, significance, contribution, and commitment/competence to the role assigned.

### Panels' Grade

The grade of the panels is consists of two (2): **group grades** and **individual grades**. Group grade covers both the manuscript and the system design while individual grade covers the oral presentation and the relevance of his/her answer(s) to question(s). Each panel's quantitative ratings come with a directly proportional qualitative verdict. The chairman of the panel will collate both quantitative ratings and qualitative verdicts.

**Group Grade**

| Manuscript | 50 points |
|---|---|
| Preliminary Pages<br>    Table of contents is consistent<br>    Acknowledgment is brief and formal<br>Abstract is brief but complete | **5** |
| Chapter 1<br>The Problem and Its Scope<br>    Introduction<br>        Rationale of the  Project is intact and provides a clear overview of the entire Research/Capstone Project<br>    The Problem<br>        Statement of the Problem/Objectives of the Project is 'SMART' - **Specific, Measurable, Achievable, Realistic, and Timely**<br>        Scope and Limitations are clearly defined<br>        Significance of the study section enumerates and elaborates operationally all the beneficiaries of the system/capstone | **15** |
| Chapter 2 | |
| **Review of the Related Literature and Studies** are recent and relevant. Anchor provides solid background of the Research/Capstone Project. Auxiliary theories are evident. Sources are appropriately cited and noted. Related studies are relevant and includes global and local scope. | **5** |
| Chapter 3 | |
| Methodology strictly follows the SDLC<br>Methodology includes project management techniques appropriate for the chosen Research / Capstone Project<br>Requirements Specification is more or less complete and answers the objectives<br>Design tools used are relevant and appropriate which should be based on requirements<br>Development plan is concrete and should be consistent with the Design<br>Testing Techniques to be used should assess all aspects of the developed Research / Capstone Project<br>Implementation  Plan should be aligned with the objectives | **15** |
| Final Pages | |
| Findings and Conclusions are attuned with the objectives<br>Recommendations are feasible and practical<br>References should be APA Format<br>Appendices are relevant and help support the principal content | **5** |
| Manuscript Mechanics | |
| Organization and Fluidity of ideas are apparent<br>Formatting and layout are consistent<br>All parts of the manuscript should be grammatically correct | **5** |

**Individual Grade**

| Oral Examination | 30 points |
|---|---|
| Comprehensiveness of the Answer/Ideas | 20 |
| Contribution/Support to the Team | 5 |
| Delivery/Command of the English Language | 5 |

**Verdicts**

There will be three (3) possible verdicts after the Proposal Hearing. The verdict is a unanimous decision among the three members of the Capstone Project Oral Defense panel. Once issued, it is final and irrevocable.

| | CAPSTONE PROJECT AND RESEARCH 1 | VERDICT |
|---|---|
| | **APPROVED WITH MINOR REVISIONS.** Minor revisions are necessary but they do not have to be presented in front of, and checked by all panelists. |
| | **APPROVED WITH MAJOR REVISIONS**. Major revisions shall be incorporated in the final copy of the Revised Project Proposal Manuscript. These revisions must be checked by the panelists. |
| | **DISAPPROVED.** The proponents failed to propose a researchable or scholarly project. This verdict will not compel the panelists to give numeric grades. Team members who will get this verdict during the Proposal Hearing will be given a **5.0 FINAL GRADE.** |

**Capstone Project and Research 2**

| | |
|---|---|
| **Role Commitment/Project Management** | |
| • Project Managers grades his/her team members | 20 |
| • Adviser grades the Project Manager | |
| | |
| **Panels' Grade:** | |
| **Output (Developed System) Group Grade** | |
| • Title = Objectives = Output | 20 |
| • Scope = Modules = Output | 20 |
| • System = Methods = Output | 10 |
| **Individual (Oral Presentation)** | 30 |
| | |
| **Total** | **100** |

**Panels Grade**

The panel's quantitative rating is composed of two (2): **group grades** and **individual grades**. Group grade covers the system output that is coherent with the title of the study, the set of objectives, the identified modules which includes methods used to deliver the goals and deliverables of the system. Individual grade, covers the oral presentation and the relevance of his/her answer/s to question/s. Each member of the panel quantitative ratings comes with a directly-proportional qualitative verdict. Both quantitative ratings and qualitative verdicts will be collated by the chairman of the panel.

**Group Grade**

| Capstone Project and Research 2 \| Output \| 50 points | |
|---|---|
| • The output should be consistent with the title and objectives as defined during the proposal stage | 20 |
| • The output should be consistent with the scope and modules as defined during the proposal stage | 20 |
| • The output should be consistent with the kind of system and the methods employed as defined during the proposal stage. | 10 |

Individual Grades

| Capstone Project and Research 2 \| Output \| 50 points | |
|---|---|
| • Comprehensiveness of the Answer/Ideas | 20 |
| • Contribution/Support to the Team | 5 |
| • Delivery/Command of the English Language | 5 |

**Verdicts**

| | CAPSTONE PROJECT 2 \| VERDICT |
|---|---|
| | **ACCEPTED WITH REVISIONS.** Revisions are necessary but they do not have to be presented in front and check by all panelists. |
| | **RE-ORAL DEFENSE**. Another Oral Defense session, in which all panelists must be present, is necessary to further clarify the objectives and scope of the capstone project. |
| | **NOT ACCEPTED.** The proponents failed to achieve the objectives of the research established in the proposal. This verdict will not compel the panelists to give numeric grades. Team members who will get this verdict will be given a **5.0 FINAL GRADE.** |

**Capstone Project and Research 1 Guidelines**

1. **Enrolment.** Prior to the enrolment of the subject, pre-requisites should have complied. Only officially-enrolled Capstone Project and Research 1 and Capstone Project and

Research 2 students are allowed to join a group and proceed with pertinent activities thereafter.

2. **Orientation.** On the first week of classes, a general orientation will be conducted where this Capstone Project Manual will be discussed. All students will then e required to secure the Oath of Confirmation pertaining to the receipt of copy and discourse about the said manual (Refer to *Appendix A: Capstone 1 Oath of Confirmation Form*). This form will be submitted on the set deadline/due date.

3. **Grouping.** Part of the general orientation will be the grouping activity where all students across and regardless of section/offer code are given the privilege to form a team of 3 to 4 members. Upon the team organization, each group will have to secure the Team Composition Form containing the important profile of each member and the corresponding role assignments (Refer to *Appendix B: Capstone Project Team Composition Form*). This form will be submitted on the set deadline/due date.

4. **Pitch Deck Preparation.** Immediately after the team is organized, they will be required to prepare a pitch deck in the form of a Powerpoint presentation (Refer to *Appendix V: Pitch Deck Outline*) ready for the scheduled lightning pitch.

5. **Initial Review of Related Literature/Studies**. Along with the Pitch Deck, the team will have to start reviewing relevant and related literatures and studies for each of the topics.

6. **Lighting Pitching.** The Subject Teacher will then schedule the lightning pitch for each team. It is aimed at selecting a final topic of interest for the team. Once a topic of interest is selected and agreed upon by all, the team will then secure the working title form.

7. **Advisers' Assignment.** The Dean and the Faculty will then meet and decide/appoint/assign each team's adviser based on expertise and other objective considerations. The CCICT may also give the team the discretion to choose their desired adviser subject to Dean's approval. The Working Title Forms will then be signed by the identified adviser of each team.

8. **Adviser-Team Consultation.** The team will then start doing formal consultations with their adviser. Each team is required at least five (5) consultation cycles imposing the extent of completion of deliverables. ( Refer to *Appendix F. Capstone 1 Consultation Logs Form*). The adviser and the project manager will affix their signatures in each formal consultation.

The said form will be required in the processing of the Proposal Hearing Notice. Hence, the adviser will be made to endorse the team whether or not they are allowed to propose.

9.  **Proposal Presentation Preparation.** The proposal hearing presentation must be prepared well by the team. It must strictly follow the set outline and rules. (Refer to *Appendix I. Presentation Outline and Guidelines*).

10. **Proposal Hearing.** Proposal Hearing and Mechanics will have to be followed and strictly adhered. (Refer to *Appendix J Proposal Hearing  Rules and Mechanics*).

11. **Proposal Manuscript Revisions.** The team and adviser will ensure that all the recommendations will have been incorporated in the Revised Proposal Manuscript with the corresponding title page.

12. **Proposal Approval Sheet Routing.** The team then routes the Proposal Hearing Approval Sheet to all required Signatories.

13. **Submission of Proposal Softbound and CD/DVD.** After all the signatories will have signed the approval sheet, the team then has to have the entire proposal manuscript soft-bounded. The color of the softbound is <u>Red</u>. The softbound together with the Proposal CD/DVD will be submitted to the College. (Refer to *Appendix U Capstone Project CD/DVD Labeling format and Appendix Capstone CD/DVD Contents Guide*).

**Capstone Project and Research 2 Guidelines**

1.  **Orientation.** On the first week of classes, a general orientation will be conducted where this Capstone Project Manual will be discussed again. All students will then be required to secure the Oath of Confirmation pertaining to the receipt of copy and discourse about the said manual (Refer to *Appendix N: Capstone 2 Oath of Confirmation Form*). This form will be submitted on the set deadline/due date.

2.  **Capstone Project Advisers' Forum.** Each team adviser must meet his/her teams in one setting. General and specific issues and concerns must be reported and settled. Furthermore, if there are changes or the Dean and Subject Teacher approve team regrouping, a new duly signed copy of the Team Composition Form must be secured and submitted to the College Secretary.

3. **Finalization of the List of Modules.** The Project Manager and his/her team must finalize the List of Modules. The adviser must check that the same list is anchored from the title, objectives and scope.

4. **Adviser-Team Consultation.** The team will continue doing formal consultations with their adviser. The team is required of at least three (3) prototype consultation cycles imposing the extent of completion of modules (Refer to *Appendix O Capstone 2 Consultation logs*). The adviser and the project manager will affix their signatures in each formal consultation. **The adviser will be made to endorse whether or not they are allowed to defend their project or not.**

5. **Panel-Team Consultation.** The team can, from time to time, consult any member of the Panel to whom they proposed/defended for clarifications of their recommendations. The panel member must ensure that academic integrity is observed and therefore must not be biased in any form/aspect.

6. **Oral Defense Manuscript Finalization.** The manuscript for Capstone 2 must be completed and finalized by the team and their adviser. (Refer to *Appendix P Capstone 2 Manuscript Outline).*

7. **Oral Defense Presentation Preparation.** The oral defense presentation must be prepared well by the team. It must strictly follow the set outline and rules.

8. **Oral Defense**. During the proceedings, the adviser and the team will take note of all the recommendations of the Oral Defense panel.

9. **Oral Defense Manuscript Revisions.** The team and adviser will ensure that all the recommendations will have been incorporated in the Revised Oral Defense Manuscript with the corresponding title page. The same title page template will be used for the hardbound cover page.

10. **System Output Revisions.** The team then implements all the recommendations not only the manuscript but also the important system or output. The said revisions will be bases of the panel member(s) in the signing of the Approval Sheet.

11. **Oral Defense Approval Sheet Routing.** The team will route the Oral Defense Approval Sheet together with the revised system output to all required signatories. (Refer to *Appendix S Capstone 2 Approval Sheet Template*).

12. **Submission of Oral Defense Hardbound and CD/DVD.** After all the panel members and signatories have signed the approval sheet, the team then has to have the entire oral defense manuscript hard bounded. The color of the hardbound is **DARK BLUE** with **GOLD TEXT.** The hardbound together with the CD/DVD will be submitted to the Subject Teacher.

13. **Research/Capstone Project Colloquium.** The college wlil then select Capstone Projects/Researches worthy to be highlighted in either a college-organized colloquium and/or externally-organized research events.

# Appendices

**Appendix A. Capstone 1 Oath of Confirmation**

Date: _____

### OATH OF CONFIRMATION

      This is to confirm that I, _____, a BSIT-3 student, currently enrolled in the course of Capstone Project and Research 1, have aptly received a copy; religiously read and understood its contents; and openly submit to the terms, rules, conditions and regulations stated in the Capstone Project Manual 2021 document implemented by the Subject Teacher.
      This is also to affirm that said guidelines were judiciously discussed and explicitly elaborated in a forum conducted by the Subject Teacher.

CONFORME:

_____
(Signature of Student over Printed name)/ Date

---

Date: _____

### OATH OF CONFIRMATION

      This is to confirm that I, _____, a BSIT-3 student, currently enrolled in the course of Capstone Project and Research 1, have aptly received a copy; religiously read and understood its contents; and openly submit to the terms, rules, conditions and regulations stated in the Capstone Project Manual 2021 document implemented by the Subject Teacher.
      This is also to affirm that said guidelines were judiciously discussed and explicitly elaborated in a forum conducted by the Subject Teacher.

CONFORME:

_____
(Signature of Student over Printed name)/ Date

**Appendix B: Capstone Project Team Composition Form**

| Name | Signature | Role Assignment | Email | Contact # |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |

**Appendix C: Capstone Project Business Model Canvas Template**

| Key Partners | Key Activities | Value Propositions | Customer Relationships | Customer Segments |
|---|---|---|---|---|
| | | | | |
| | Key Resources | | Channels | |
| | | | | |
| Cost Structure | | | Revenue Streams | |

**Appendix D: Capstone Project Comparative Matrix Template**

| Features | Application 1 | Application 2 | ApplicationN | Your Application |
|---|---|---|---|---|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Appendix E: Research Working Title Form**

| | |
|---|---|
| Name of the Proponents | |
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| | |
| Proposed Research Title: | |
| | |
| | |
| Date: | Date: |
| Submitted by: | Noted and Approved by: |
| | |
| (Signature of Project Leader over Printed Name) | (Signature of Adviser over Printed Name) |

**Appendix F. Capstone 1 Consultation Logs Form**

**Research/Capstone Project Title**

**Name of the Proponents**

**Name of the Group**

**1<sup>st</sup> Consultation** : **CHAPTER 1 must be completely delivered for adviser's evaluation**

| Date | PM's Signature | Adviser's Signature |
|------|----------------|---------------------|

**2<sup>nd</sup> Consultation : CHAPTER 1 and 2 must be completely delivered for adviser's evaluation**

| Date | PM's Signature | Adviser's Signature |
|------|----------------|---------------------|

**3rd Consultation** : **CHAPTER 1, 2 and 3 must be completely delivered for adviser's evaluation**

| | | |
|---|---|---|
| **Date** | **PM's Signature** | **Adviser's Signature** |

**4th Consultation** : **CHAPTER 1, 2, 3 and including initial and finals pages must be completely delivered for advisers' evaluation**

| | | |
|---|---|---|
| **Date** | **PM's Signature** | **Adviser's Signature** |

This is to certify that I have been regularly consulted by my advisees; have reviewed their manuscript of the above-stated study. As their adviser, I therefore submit them ready for Proposal Hearing as the Chapters 1, 2, and 3 and the pertinent parts of their manuscript are complete

_____

(Signature of Adviser over printed name)

**Appendix G. Capstone 1 Manuscript Outline**

Title Page

ACKNOWLEDGMENT

DEDICATION

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I - INTRODUCTION

    Rationale of the Study

    Objectives of the Study

    Significance of the Study

    Flow of the Study

    Definition of Terms

CHAPTER II -  REVIEW OF RELATED LITERATURE AND STUDIES

    Related Literature

    Related Studies

CHAPTER III -  RESEARCH METHODOLOGY

    Software Engineering Methodology

    Planning Phase

        Business Model Canvas

        Program Workflow

        Gantt Chart

        Functional Decomposition Diagram

    Analysis Phase

        Use-Case Diagram

        Storyboard

        Database Design

            Entity-Relationship Diagram

            Data Dictionary

        Network Design

**Appendix H. Capstone Project Manuscript Mechanics**

The Capstone Project Manuscript must follow the following format and technicalities:

a. Paper

    i. Size          : 8.5 x 11
    ii. Orientation : Portrait (except for special diagrams)
    iii. Substance   : 20

b. Spacing

    i. 1.5 inches

c. Indention

    i. 1 tab

d. Margins

    i. Top         : 1 inch
    ii. Left        : 1.5 inch
    iii. Bottom   : 1 inch
    iv. Right     : 1 inch
    v. Header   : 0.5 inch
    vi. Footer    : 0.5 inch

e. Font

    i. Sizes
        a. Heading 1         : 12
        b. Heading 2         : 12
        c. Heading 3 and Content : 11
    ii. Type: Strictly Times New Roman
    iii. Color: Black

f. Pagination

    i. Top Right
    ii. No page shown on first page of every chapter

g. Page Breaks
h. Page break is only used when starting a new chapter
i. Sample Layout for Tables

<div align="center">Table Number</div>
<div align="center">Table Title</div>

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

j.   Sample Layout for Figures



Figure Number: **<u>Figure Title (bold, underlined)</u>**

**Appendix I. Capstone 1 Presentation Outline and Guidelines**

Presentation Slides Outline (Proposal Hearing)

- Introduction
- Concept/Explainer Video
- Title Page (Includes the Title, Proponents with Role (PM will introduce to the Panel)
- CHAPTER 1 –
  - Rationale(Verbatim)
  - Objectives of the Study/Project(Verbatim)
  - Significance of the Study/Project(just the beneficiaries, elaborate orally)
  - 
- Chapter 2
  - Related Literature (bulleted terms only, explain and elaborate orally)
  - Comparative Matrix
- Chapter 3
  - Environment (Optional)
  - Software Engineering Methodology
  - Planning Phase
    - Business Model Canvas
    - Program Workflow
    - Gantt Chart
    - Functional Decomposition Diagram
  - Analysis Phase
    - Use-Case Diagram
    - Storyboard
    - Database Design
    - Entity-Relationship Diagram
    - Data Dictionary
    - Network Design
  - Development Phase

- Technology Stack Diagram

- Software Specification

- Hardware Specification

- Program Specification

  - List of Modules

- Testing Plan (bulleted terms only, explain and elaborate orally)

\

**Appendix J. Proposal Hearing Rules and Mechanics**

Should be strictly followed both panel and presentations

| | | |
|---|---|---|
| I. | Preparations (Initial Preparations) | 5 min |
| II. | Proposal Hearing Proper (Presentation) | 25 min |
| III. | Question and Answer (Q & A) <br><br> • Involves the panel's clarification and cross-examination | 40 min |
| IV. | Panel Deliberation <br><br> • Grades consolidation <br> • Verdict deliberation | 10 min |
| V. | Verdict Presentation <br><br> • The chairman announces the group average grade, but not the individual grades. | 5 min |
| VI. | FINALIZATION / FINAL ADJUSTMENT | 5 min |
| | TOTAL | 90 mins |

**Appendix K. Capstone 1 Manuscript Title Page Template**

TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE

TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE

TITLE TITLE TITLE TITLE TITLE TITLE

*(Must be inverted pyramid form, all caps)*


A Capstone Project Presented to the Faculty of

College of Computer, Information and Communication Technology Department

Cebu Technological University - Main Campus



In Partial Fulfillment of the Requirements

for the degree Bachelor of Science in Information Technology



By


Juan Dela Cruz

Pedro Reyes



Bill Gates

Adviser



May 2021

**Appendix L. Capstone 1 Approval Sheet Template**

<div align="center">

**APPROVAL SHEET**

</div>

The Capstone Project entitled **Municipality of Argao Public Vehicle Information System** prepared and submitted by Juan Dela Cruz and Peter Reyes has been examined and is recommended for approval and acceptance.

Recommended:

BILL GATES, Ph.D

Adviser

APPROVED by the Committee on PROPOSAL HEARING with a verdict of _____ on

_____.

<div align="center">

**CHAIRMAN C. CHAIRMAN**

Chairman

</div>

**PANEL A. MEMBER**                                    **PANEL C. MEMBER**

    Member                                                        Member

<div align="center">

**PANEL B. MEMBER**

Member

</div>

ACCEPTED and APPROVED in partial fulfillment of the requirements in Bachelor of Science in Information Technology

<div align="right">

**ASSOCIATE A. DEAN**

Associate Dean, CCICT


**DEAN O. DECOLLEGE**

Dean, CCICT

</div>

**Appendix M. List of Modules**

| Programmer | Modules | User 1 | User 2 | User 3 |
|---|---|---|---|---|
| Programmer | **Module Name 1** | | | |
| | 1. Unit 1 | | | |
| | 2. Unit 2 | | | |
| | 3. Unit 3 | | | |
| | 4. Unit N | | | |
| No. of Points | | | | |
| Programmer 2 | **Module Name 2** | | | |
| | 1. Unit 1 | | | |
| | 2. Unit 2 | | | |
| | 3. Unit 3 | | | |
| | 4. Unit N | | | |
| No. of Points | | | | |
| Total Number of Modules | | | | |
| | | | | |

Example:

| Programmer | Modules | Owner | Manager | Driver |
|---|---|---|---|---|
| Programmer 1 | **Client Management** | | | |
| | 1. Create | * | * | |
| | 2. Retrieve | * | * | * |
| | 3. Update | * | * | |
| | 4. Delete | * | * | |
| No. of Points | | 1 | | |
| | | | | |
| Programmer 2 | **Delivery** | | | |
| | 1. Create | * | * | |
| | 2. Retrieve | * | * | * |
| | 3. Update | * | * | |
| | 4. Delete | * | * | |
| | 5. Assign Driver | * | * | |
| No. of Points | | 1 | | |
| | | | | |
| | | | | |
| Total Number of Modules | | 2 | | |

**Appendix N. Capstone 2 Oath of Confirmation**

Date: _____

### OATH OF CONFIRMATION

This is to confirm that I, _____, a BSIT-3 student, currently enrolled in the course of Capstone Project and Research 2, have aptly received a copy; religiously read and understood its contents; and openly submit to the terms, rules, conditions and regulations stated in the Capstone Project Manual  document implemented by the Subject Teacher.

This is also to affirm that said guidelines were judiciously discussed and explicitly elaborated in a forum conducted by the Subject Teacher.

CONFORME:

_____

(Signature of Student over Printed name)/ Date

---

Date: _____

### OATH OF CONFIRMATION

This is to confirm that I, _____, a BSIT-3 student, currently enrolled in the course of Capstone Project and Research 2, have aptly received a copy; religiously read and understood its contents; and openly submit to the terms, rules, conditions and regulations stated in the Capstone Project Manual document implemented by the Subject Teacher.

This is also to affirm that said guidelines were judiciously discussed and explicitly elaborated in a forum conducted by the Subject Teacher.

CONFORME:

_____

(Signature of Student over Printed name)/ Date

**Appendix O. Capstone 2 Consultation Logs Form**

**Research/Capstone Project Title**

**Name of the Proponents**

| | |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

**Total Number of Modules:**                **Noted by Subject Teacher:**

| Prototype | Date of Consultation | # of Modules Fully Implemented | #of Modules Partially Implemented | Running Score | % | PM Signature | Adviser Signature |
|---|---|---|---|---|---|---|---|
| **1st Prototype**<br><br>30% - 50% of the modules must be running | Remarks: | | | | | | |
| **2nd Prototype**<br><br>51% - 70% of the modules must be running | Remarks: | | | | | | |

| | **Remarks:** |
|---|---|
| **3ʳᵈ Prototype**<br><br>71% - 100% of the modules must be running | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |

This is to certify that I have been regularly consulted by my advisees; have reviewed their system output as well as the required manuscript of the above-stated study. As their adviser, I, therefore, submit them ready for **Oral Defense** as their third prototype is within the required percentage.

_____

(Signature of Adviser over printed name)

**Appendix P. Capstone 2 Manuscript Outline**

Title Page

ACKNOWLEDGMENT

DEDICATION

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I - INTRODUCTION

    Rationale of the Study

    Objectives of the Study

    Significance of the Study

    Flow of the Study

    Definition of Terms

CHAPTER II -  REVIEW OF RELATED LITERATURE AND STUDIES

    Related Literature

    Related Studies

CHAPTER III -  RESEARCH METHODOLOGY

    Software Engineering Methodology

    Planning Phase

        Business Model Canvas

        Program Workflow

        Gantt Chart

        Functional Decomposition Diagram

    Analysis Phase

        Use-Case Diagram

        Storyboard

        Database Design

            Entity-Relationship Diagram

            Data Dictionary

        Network Design

**Appendix Q. Capstone 2 Oral Defense Presentation  Outline and Guidelines**

Presentation Slides Outline (Oral Defense)

- Concept/Explainer Video

- Title Page (includes title, Proponents with Role)

- Chapter 1

  - Objectives of the Study/Project (bulleted, verbatim)

  - Scope and Limitations (bulleted terms, explain/elaborate orally)

- Chapter 3

  - Functional Decomposition Diagram

  - Use Case Diagram

  - Entity Relationship Diagram

  - Technology Stack

  - Network Design

  - Project Roadmap

- Conclusions

- Recommendations

- System Demo

**Appendix R. Oral Defense Rules and Mechanics**

| I. | Preparations (Initial Preparations) | 5 min |
|---|---|---|
| II. | Defense Proper (Presentation) | 25 min |
| III. | System Demo (Q & A)<br><br>• Involves the panel's clarification and cross-examination | 40 min |
| IV. | Panel Deliberation<br><br>• Grades consolidation<br>• Verdict deliberation | 10 min |
| V. | Verdict Presentation<br><br>• The chairman announces the group average grade, but not the individual grades. | 5 min |
| VI. | FINALIZATION / FINAL ADJUSTMENT | 5 min |
| | TOTAL | 90 mins |

**Appendix S. Capstone 2 Manuscript Title Page Template**

TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE

TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE

TITLE TITLE TITLE TITLE TITLE TITLE

*(Must be inverted pyramid form, all caps)*

A Capstone Project Presented to the Faculty of

College of Computer, Information and Communication Technology Department

Cebu Technological University - Main Campus

In Partial Fulfillment of the Requirements

for the degree Bachelor of Science in Information Technology

By

Juan Dela Cruz

Pedro Reyes

Bill Gates

Adviser

May 2021

**Appendix T. Capstone 2 Approval Sheet Template**

<center>APPROVAL SHEET</center>

The Capstone Project entitled **Municipality of Argao Public Vehicle Information System** prepared and submitted by Juan Dela Cruz and Peter Reyes has been examined and is recommended for approval and acceptance.

Recommended:

BILL GATES, Ph.D

Adviser

APPROVED by the Committee on ORAL DEFENSE with a verdict of _____ on

_____.

<center>**CHAIRMAN C. CHAIRMAN**

Chairman</center>

**PANEL A. MEMBER**　　　　　　　　　　　　　**PANEL C. MEMBER**
　Member　　　　　　　　　　　　　　　　　　　Member

<center>**PANEL B. MEMBER**

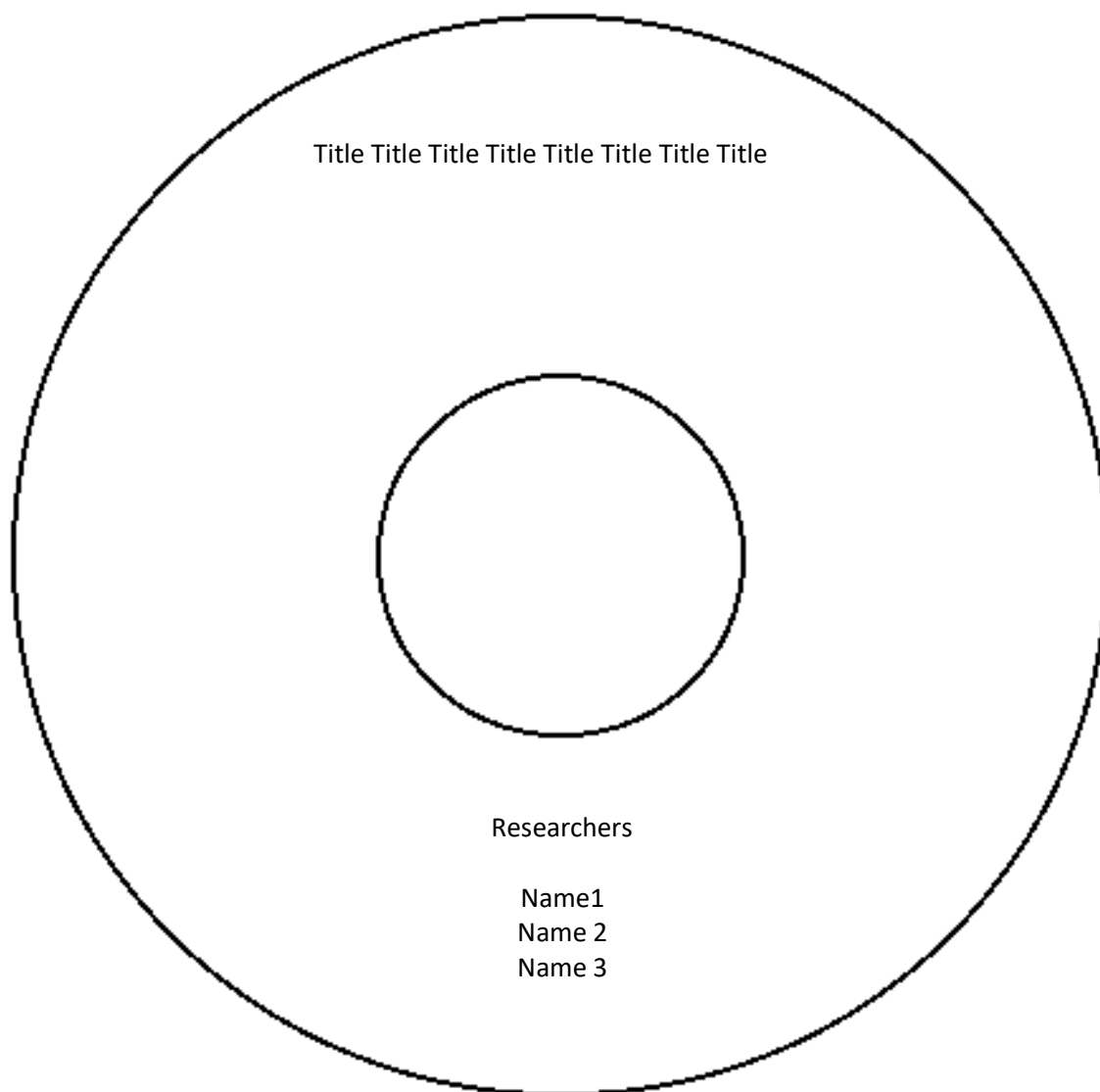Member</center>

ACCEPTED and APPROVED in partial fulfillment of the requirements in Bachelor of Science in Information Technology

<div align="right">

**ASSOCIATE A. DEAN**

Associate Dean, CCICT


**DEAN O. DECOLLEGE**

Dean, CCICT

</div>

**Appendix U. Capstone Project CD/DVD Labelling Format**

Title Title Title Title Title Title Title Title

Researchers

Name1
Name 2
Name 3

Background color

| Green | Capstone 1 |
|-------|------------|
| Yellow | Capstone 2 |

Reminder:

**Appendix V. Pitch Deck Outline**

| Slide 1 | Title | Provide company name, and startup idea title, and contact details such as an address, email, and cell number. |
|---------|-------|------|
| Slide 2 | Problem/Opportunity | Describe the pain point that you're alleviating, or the pleasure you're providing |
| Slide 3 | Value Proposition | Explain the value of the pain you alleviate or the value of the pleasure you provide. |
| Slide 4 | Underlying Magic | Describe the technology, secret sauce, or magic behind your product. The less text and the more diagrams, schematics, and flowcharts the better. If you have a prototype or demo, this is the time to transition to it. |
| Slide 5 | Business Model | Explain who has the money temporarily in his pocket and how you're going to get it into yours. Simply put, describe who your customers are, and your revenue streams. |
| Slide 6 | Go-To-Market Plan | Explain how you will acquire and retain your customers |
| Slide 7 | Competition Analysis | Provide a complete view of the competitive landscape. Describe who is your toughest competitor in terms of strengths and weaknesses, and what makes your start-up idea/product leader. |
| Slide 8 | Management Team | |

References

CHED, (2013). *National Higher Education Research Agenda 2*. Retrieved from
www.ched.gov.ph

CHED, (2015). *CHED Memorandum Order (CMO) No. 25. Revised Policies, Standards, and Guidelines for Bachelor of Science in Computer Science (BSCS), Bachelor of Science in Information Systems (BSIS), and Bachelor of Science in Information Technology (BSIT) programs.* Retrieved from www.ched.gov.ph

Niñal, M.M. and  Satorre, S.B, (2015), *College of Computer Studies: Students' Capstone Project Manual.*