

DON HONORIO VENTURA STATE UNIVERSITY

Lubao Extension Campus Porac Extension Campus





College of Computing Studies

Bachelor of Science in Information Technology

The Capstone Manual Guidebook

A Step-by-Step Guide in Capstone Writing

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CAPSTONE PROJECT MANUAL GUIDELINES

Purpose

The purpose of this manual is to provide academic procedural guidelines to help assist the candidate and faculty in the process of writing and submitting a written report in partial fulfillment for the degree in Bachelor of Science in Information Technology (BSIT). The described procedures will assist the preparation and approval of the Capstone project/thesis. The Capstone Project development is the combination of student's learning from the professional courses with the total academic experience.

All the necessary forms, templates, letter and checklist and other pertinent documents are provided with this manual. The bases of this are the following: Commission of Higher Education (CHED) Memorandum Order No. 25, Series of 2015, Philippine Society of Information Technology Thesis/Capstone Framework, Association for Computing Machinery (ACM) Journal Article Format, IMRAD Format prescribed by the Don Honorio Ventura State (DHVSU) University Research Development Council and College of Computing Science (CCS) Capstone Project/Thesis Manual.

The Capstone Project development is a collaborative effort by a Capstone Group, a Capstone Adviser, and Capstone Project Members, Capstone Instructor, and the faculty of CCS Lubao Campus.

Rationale

The Bachelor of Science in Information Technology (BSIT) Capstone is required for candidates for graduation in CHED Memorandum Order No. 25, Series of 2015, or the "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".

The Capstone Project is required for the candidates for graduation in the BSIT program. It is the synthesis that integrates the candidates learning from the professional courses with the total academic experience. It is expected to be a substantial piece of work whose completion will demonstrate the totality of a candidate's mastery of a particular field of the program. It is also expected that the output will be beneficial not only in the field of IT but also to the community where the project take place.

The Capstone Project will allow the candidates to create their innovative ideas in the world of IT and writing a paper that describes that dream and why you wrote it. The purpose of the study is to discover new knowledge or enhance existing knowledge in the field of interest.

At the end, the Capstone Project will allow the candidates a total learning experience from theoretical to actual application of their program in the community or industry. This will give the candidates also to collaborate with their peers, master the field they choose, use the knowledge they acquire and apply it. And ultimately, this will showcase what they have learned and achieved during their study.

Scope

The Capstone Project should integrate the different courses, knowledge and competencies learned in the curriculum. Candidates are encourage to produce innovative results, generate new knowledge or theories, or explore new frontier of knowledge or application areas.

An Information Technology Capstone Project focuses on the infrastructure, application, or processes involved in implementing a Computing solution to a problem. The scope of the capstone project must ensure that the recommended infrastructure and its implications on other systems should be clearly specified in the final report with the introduction of the project.

The Suggested Areas of Topics or Investigations for an I.T. Capstone Project

Below are topics which identify the areas of investigation for an IT Capstone which graduating students can freely undertake.

- Software Development
 - Software Customization
 - Information Systems Development for an actual client (with pilot testing)
 - Web Applications Development (with at least alpha testing on live servers)
 - Mobile Computing Systems
- Multimedia Systems
 - Game Development
 - e-Learning Systems
 - > Interactive Systems
 - > Information Kiosks
- Network Design and Implementation and Server
- Farm Configuration and Management
- IT Management
 - IT Strategic Plan for Sufficiently Complex Enterprises
 - > IT Security Analysis, Planning and Implementation

Understanding the Varying Classifications of Capstone Projects

The Capstone Project has three (3) classifications namely: a major-project course, a portfolio-building course, or a multiple-project course.

The Major Project Course

As the name implies, in this style of capstone course, a student generally works on a single large project-such as a thesis paper or large research project-for the entire semester. This is generally the most-widely used capstone course format.

The Portfolio-Building Capstone Course

Typically used to evaluate students in the creative arts, students in this kind of capstone course develop a large portfolio of projects or pieces. Either a single piece is selected for evaluation or the entire portfolio of work is reviewed.

The Multiple-Project Course

This kind of capstone course is likely to feature multiple small-group projects. Students in these capstone courses are generally required to demonstrate their knowledge of given material in every format, from oral reports to multimedia presentations to research papers and exams.

CAPSTONE PROJECT GUIDELINES

QUALIFICATION

Each Capstone Project Candidate must be a bonafide Information Technology Student of DHVSU Lubao Campus in third Year standing and for students enrolled during 2017 – 2018 until 2019 – 2020. The student must have an approved Capstone Project Title Proposal.

GROUPING REQUIREMENTS

- The capstone project group are given the option to select their groupings during the initial or first meeting on the Capstone Writing course.
- A group consist of at least five (5) and a maximum of six (6) is allowed, unless otherwise necessary to form a group greater than six (6) or less than five (5); only upon the Capstone Project Chairman's and Capstone Advisers' approval.
- The composition of the Capstone Group must be retained, as much as possible, throughout the stages of the Capstone Project. A Capstone Group may only be dissolved if two or more of the members dropped from the course or failed to enroll for the semester. If the Capstone Group composition is to be changed, the dean's approval is needed.
- Capstone Group are encouraged to be on the lookout for potential ideas as early as possible in their degree program. This is to ensure that the students are fully prepared to begin the task and will efficiently use the time available for advising and consultation. The Capstone Group and the Chosen Technical Adviser must sign the Form 1 Commitment and Agreement Form.
- The Capstone Group is eligible for TITLE DEFENSE, MOCK ORAL DEFENSE and FINAL ORAL DEFENSE only if the Capstone Instructor and the Capstone Adviser recommend it by signing the Form 6 - Recommendation for Oral Examination Form.
- The Capstone Group must submit four (4) copies of the Capstone Project Documentation for any of the Oral Defense/Presentation mentioned in this manual to the Capstone Instructor. Submission should not be later than 7 calendar days or as

set by the Capstone Instructor before any of the oral examinations of the semester. Non-compliance to deadline and submission shall mean an automatic re-defense or failing grade for the particular oral presentation. In case of online defenses, the Capstone Group must submit the Capstone Project Documentation 7 calendar days or as set by the Capstone Instructor. This will give the Capstone Project Committee the time in evaluating the said document.

- The results of a Capstone Project are public domain. If the results will contain software
 or concepts that an organization will claim as propriety, then the project is not an
 acceptable Capstone Project. The source code listing may be returned to the student
 after evaluation and grading.
- Academic integrity is a requirement of continued good academic standing and for the awarding of a bachelor's degree. Only work meeting the highest standards of integrity will be accepted for degree requirements at the CCS.
- Plagiarism is unacceptable for this Capstone Project. Whenever you use the ideas of others, you must cite the source. Exact words must be quoted and cited. Any ideas or conclusions presented as yours must be your own. Plagiarism is defined as using another's work without giving credit. Example are:
 - ➤ Reproducing another person's work, with or without that person's knowledge or permission, whether published or unpublished, including but not limited to, original ideas, research, computer programs, and other creative expression.
 - Copying information from computer-based sources, i.e., the Internet
 - Allowing another person to substantially alter or revise your work and submitting it entirely as your own.
 - Using another's written ideas or words without properly acknowledging the source. The term "source" includes published works like in books, magazines, newspapers, websites, and unpublished sources like survey results and other students' research paper.

PANEL OF JURORS

- The Panel of Jurors that will evaluate each Capstone Project Proposal shall be composed
 of three (3) individuals, coming from the faculty of the DHVSU, or through invitation of an
 IT Professional from other institution or an IT Industry practitioner.
- The Panel shall comprise of one (1) Chairman and two (2) members. It is mandated that one (1) of the panel member should be at least a Master's Degree Holder.
- Schedule of Jurors shall be disclosed a week before the defense to the Capstone Project candidates, or among the Jurors themselves. Such schedule shall prepared by the Capstone Project Chairman.

CAPSTONE PROJECT BOOK

 The University Research Manual Standards (IMRAD) will be strictly followed as general format.

- Capstone Project book must be presented in a formal and organized manner. Proper and standards contents requirements must be observed with respect to Capstone Project requirements. Plagiarizing or reproduction of past projects is therefore strongly discouraged.
- Four (4) copies must be presented to the panelist during deliberation.
- After the deliberation, and reproofing of the documents, all capstone project books must be properly hard bound with cover in **SILVER GRAY ONLY.**

DELIBERATION/MANNER OF DELIBERATION

- Each Capstone Project Group should be scheduled for Oral Defense Presentation. The Capstone Project Group must accomplish the Form 5 – Request for Oral Examination duly signed by the Technical Adviser.
- The Capstone Project Candidates are required to submit the **Form 6** duly approved by academic and technical adviser or both for final deliberation.
- Each Capstone Project Candidate is expected to com promptly at the Deliberation Room on his/her scheduled day of final oral defense. He/she shall be expected to wear business or corporate attire with corresponding nameplate and must appear neat and presentable.
- Capstone Project Defense starts on time. Any Capstone Project Candidate or group who comes late for his/her scheduled deliberation, thereby, causing unnecessary delay in the schedule shall be dealt with appropriate sanctions based on the table below:

TIME	SANCTION/DEDUCTION
10 minutes	Deduction of five (5) points from the general average
20 minutes	Deduction of ten (10) points from the general average
30 minutes	Re-scheduled deliberation at a later date with the highest possible grade of 75

The official time shall be governed by the Capstone Project Council. It is thus advised that time must be synchronized with that of the official time prior to the deliberation schedule

- During defense no other people can enter the defense room unless it is their time.
- Adviser should be present during defense, if one of the panel is absent, the two panel can have a quorum to start or to postpone the defense.
- There are three Capstone Project Jurors. A juror should not be substituted. If one of the
 panel is absent, the two panel can have a quorum to start. If juror member/s are late within
 15 minutes, Capstone Group scheduled for defense will be moved to the last group to
 defend for the day.
- The Capstone Chairman acts as convener of the defense, welcoming the students, the Capstone Project Jurors and any outside observers who are allowed to observe.
- If the Capstone Adviser is not present, she/he should identify a representative prior to the start of the defense.
- Each group should be at the site of deliberation thirty (30) minutes before "call time".
- Each group shall be given a total deliberation time as show in the table below:

Oral Presentation	Discussion by the Capstone Group	Examination and Justification of the Presented Project
Title Presentation	30 to 45 minutes	45 minutes to 1 hour
Mock Oral	45 mins. to 1 hour	30 minutes to 1 hour
Presentation		
Final Oral Defense	45 mins. to 1 hour	1 hour to 1 hour and 15 minutes

- After the presentation, members of the Capstone Project Jurors are then invited to ask
 questions. There is no strict time limitation. Although, the duration of the examination is
 normally about two hours, it may be extended if necessary, to insure an adequate
 examination. All recommendation should be written in the Form 10 Capstone Project
 Evaluation and Recommendation Form. If the juror would be referencing the document,
 page number should be included and copy of the said page in the document should be
 attached to the recommendation form.
- At the end of the defense, the audience, who are in attendance, are dismissed.
- The Capstone Project group are asked to leave the room while the Capstone Project Jurors evaluates the outcome of the defense.
- The Capstone Adviser leads the discussion on the evaluation of the defense and helps clarify issues before the verdict is issued.
- All clarifications, request for the modification or elimination of certain revisions/requirements should be made within the defense period of the Capstone Project Group before the verdict is finalized.
- The Capstone Project Group is called back to the defense room for the verdict.
- Verdict to be given should only be Accepted, Accepted with r Revision, Re-Defense or Failed.
- The verdict of the Capstone Project Jurors is final and irrevocable.
- No letters will be entertained requesting changes in the Capstone Project after the verdict has been finalized.
- Any Capstone Project Group who reports on deliberation day with insufficient capstone requirements, hardware devices, and system failure may be eligible for possible disqualification or an automatic failing grade.

GRADING SYSTEM

The jurors decides on the verdict which may be one of the following:

DESCRIPTIVE GRADE	NUMERICAL GRADE
Exceptional	96 – 100
Exceeds Expectations	91 – 95
Meets Expectations	86 – 90
Fairly Meets Expectations	81 – 85
Needs Improvement	76 – 80
Failed	Below 75

Exceptional

The Capstone Project Jurors accepts the Capstone Project that the group has successfully defended without requiring any changes. At this point, the students receive a grade.

Exceeds Expectations

The group has successfully defended their Capstone Project however, minor revisions are necessary to enhance the document and/or software. At this point the jury recommends a "conditional approve" pending the completion of the required changes. This will not require a re-defense. The Capstone Project Advisor is tasked to make sure that all the revisions are made.

Meets Expectations

The group has defended their Capstone Project with clarity but must make some additions and/or enhancements on some parts of the documentation and the system. This will not require a re-defense. The Capstone Project Advisor is tasked to make sure that all the revisions are made.

Fairly Meets Expectations

The group has fairly defended their Capstone Project and fairly meets the expectations of the jurors. It means that majority of the parts of the system need to be revised, changed, or modified. At this point the jurors will schedule another defense pending the completion of any recommendations for corrective actions. In cases where a group fails to comply with the requisite or make any tangible progress or where the committee finds the Capstone Project to be of exceptionally poor quality relative to acceptable standards, the group is automatically assigned a failing grade.

Needs Improvement

The group's defense's found to be less than satisfactory. At this point the committee will schedule another defense pending the completion of any recommendations for corrective actions. In cases where a group fails to comply with the requisite or make any tangible progress or where the committee finds the Capstone Project to be of poor quality relative to acceptable standards, the group is automatically assigned a failing grade.

Fail

This means that overall, the documentation, the software/system, and the oral defense are deemed unacceptable vis-à-vis the standards set forth by the university or college. It is encouraged that the adviser schedules the defense at least one (1) month before the Final Examination to give allowance to the anticipated verdicts.

The verdict is a unanimous decision among the members of the Capstone Project Jurors. Once issued, it is final and irrevocable.

WORKING COMMITTEES AND CAPSTONE FEES

- Capstone Instructor with the help of the College Dean/Campus Director will conduct a Parents' Meeting with the presence of a PTO Officer/s as a representative and the IT Faculty before the initialization of the Capstone Project course. This may be done a week before or during semestral break.
- Amount to be collected as a Capstone Fee will be agreed with the majority of the parents in a voting system and with the support of the PTO Officer.
- A resolution must be created and passed by the PTO Officers before collection of the Capstone Fee.
- Savings on the said Capstone Project Fee shall be spent for a Project that the Capstone Project Candidates shall decide upon as a form of donation to the DHVSU Lubao Campus Computer Laboratory Facilities.

TIMETABLES AND SUBMITTALS

 The Gantt Chart and Time Table of Project activities will be submitted to the Capstone Project Chairman one (1) week after the general assembly of the Capstone Project Candidates. The progress report will be signed by the Capstone Project Adviser(s) with complete proof of evidences and documents. No late submittals will be accepted beyond the scheduled date, failure to do so means disqualification or failing grade.

GUIDELINES FOR ONLINE DEFENSES

I. Title Defense

1. Application for Title Defense

- 1.1. The Capstone Group and Capstone Instructor communicate through phone or online regarding the status of the proposal.
- 1.2. The Capstone Instructor informs the Capstone Group, Capstone Jury for their preferred schedule and online platform (e.g., Zoom, Google Meet, Microsoft Teams, Messenger Room, etc.) for the defense.
- 1.3. Once schedule has been set, the Capstone Group will accomplish a Form 11 Request for Online Oral Defense Form and submit it for approval to the Dean/Director. The form must accomplish with the active contacts of both parties.

2. Before Title Defense

- 2.1. The Capstone Group must send to the Capstone Committee a soft copy of the Title proposal at least a **week before the scheduled defense**.
- 2.2. The Capstone Instructor or the group will host the defense on the chosen online platform.
- 2.3. The College Secretary prepare the announcement of the title defense approved by the Dean/Director.
- 2.4. The College Secretary post the announcement of the title defense in the official FB page.
- 2.5. The College Secretary email the outline of title defenses three (3) day before the defense

3. During the Title Defense

- 3.1. The Capstone Instructor or Capstone Group prepares the "online meeting room".
- 3.2. The Capstone Instructor and Capstone Jury records the comments and suggestions made by the jury in the **Form 10**.
- 3.3. The jury members decide on the result of the defense (Accepted, Accepted with Revisions, Redefense, Failed). The student should not be in the "online meeting room" while panel members discuss and make their decision.
- 3.4. The Capstone Instructor contact again the group to go back to the "online meeting room" to inform them of the jury's decision.

4. After the Title Defense

- 4.1. Each Jury accomplish the **Form 10** with the necessary information.
- 4.2. Each jury will email the **Form 10** to the Capstone Instructor <u>within the first working</u> <u>day after the defense</u>.
- 4.3. The capstone instructor will email the consolidated comments and suggestions of the jurors to the College Secretary <u>within the first working day after the defense</u> also.
- 4.4. The capstone instructor will discussed the consolidated comments and suggestions of the jurors to the Capstone Group.

II. Oral Examination

1. Application for Capstone Adviser

- 1.1. The Capstone Instructor must instruct the Capstone Group to select the preferred Capstone Adviser by accomplishing the **Form 1**.
- 1.2. The group must email the **Form 1** to the chosen Capstone Adviser.
- 1.3. The Capstone Instructor consolidate all the Forms and submit to the College Secretary.
- 1.4. The Capstone Group must polished a digital draft of the documents as soon as the chosen adviser gives the go signal.
- 1.5. The Capstone Group incorporates revisions suggested by the adviser and waits until the latter certifies that the paper is ready for oral examination.

2. Application for Oral Examination

- 2.1. If the Capstone group is ready for oral examination, the adviser will email a **Form 6** to the Capstone Instructor to set the oral examination schedule. Signature is not required.
- 2.2. The Capstone Instructor or the group shall accomplish a Form 11 and contact the other jury members to get a consensus about the schedule and online platform to be used. The group must send the Form 11 to the College Secretary to inform the Capstone adviser and the Capstone Instructor.
- 2.3. The Capstone group must send a soft copy of the capstone project documentation <u>1 2 weeks before the scheduled oral examination</u>.
- 2.4. The Capstone Instructor will set a schedule for the oral examination and submit to the Dean/Director for approval.
- 2.5. The College Secretary email the jury members on their respective schedule. Though email, each jury member shall confirm their approval of the schedule of the defense and their receipt of the manuscript.
- 2.6. The adviser or the students will host the oral examination on the selected online platform. Online details must be send to the Capstone Committee before the scheduled oral examination.

- 2.7. The College Secretary prepare the announcement of the oral examination approved by the Dean/Director.
- 2.8. The College Secretary post the announcement of the oral examination in the official FB page.
- 2.9. The College Secretary email the outline of oral examination three (3) day before the defense.

3. During the Title Defense

- 3.1. The Capstone Instructor or Capstone Group prepares the "online meeting room".
- 3.2. The Capstone Instructor and Capstone Jury records the comments and suggestions made by the jury in the **Form 10**.
- 3.3. The jury members decide on the result of the defense (Accepted, Accepted with Revisions, Redefense, Failed). The student should not be in the "online meeting room" while panel members discuss and make their decision.
- 3.4. The Capstone Instructor contact again the group to go back to the "online meeting room" to inform them of the jury's decision.

4. After the Title Defense

- 4.1. Each Jury accomplish the **Form 10** with the necessary information.
- 4.2. Each jury will email the **Form 10** to the Capstone Instructor <u>within the first working</u> <u>day after the defense</u>.
- 4.3. The capstone instructor will email the consolidated comments and suggestions of the jurors to the College Secretary within the first working day after the defense also.
- 4.4. The capstone adviser will discussed the consolidated comments and suggestions of the jurors to the Capstone Group.
- 4.5. The adviser discusses with the Capstone Group the consolidated comments and suggestions of the jury members.
- 4.6. The Capstone Group must polish the paper further by addressing the comments and suggestions of the jury members.
- 4.7. Instead of submitting the unbound copy of the final Capstone Project Documentation, a soft copy must be emailed to the College Secretary/Capstone Instructor within the designated period set by the Office. The Capstone Group must attach email from jury members certifying their acceptance and approval of the student's manuscript.
- 4.8. The Capstone Group waits until the paper is approved by the Capstone Committee.
- 4.9. The Capstone Group makes necessary revisions, if applicable.
- 4.10. The Capstone Group submits bound copies with signed approval sheets (by jury members) on the date announced by the Capstone Adviser.

CAPSTONE COURSE PHASES

A capstone course is sub-divided to several phases. Each stage needs to be fully completed and each end result should successfully result into a desirable output.

Within the two (2) semesters, the students must be able to comply with the requirements expected to be delivered. These deliverables must be duly checked, edited, and approved for recommendation by both the Capstone Adviser and the Capstone Instructor. Each deliverable must be accepted and approved by the distinct Capstone Project Committee members.

As part of standardizing the evaluation and assessment of each deliverable, the Capstone Project shall be evaluated using the following metrics which are also reflected in the rubric for the different oral presentations:

- Accuracy, reliability and completeness of the deliverable or output (pertained to the documentation and system).
- Clear presentation and delivery of the required parts of the document/report.
- Outstanding ability to provide justifications to answers during the interpolation with the defense panel.

PHASE I: TITLE DEFENSE

The Capstone Project Title Defense phase is the stage where capstone developers are tasked to conceptualize and perceive a topical research that they would like to engage into. The topical research must be anchored from the suggested areas of topics and investigations.

Capstone Project Title:

The Capstone Title document must have the following parts:

- Capstone Project Title
- Broad and Specific Areas or Topics of Investigation
- Introduction
- Project Overview (state the whole concept of the project, describe the current situation or background of the study, possible deliverables of the project on how to achieve it. You can add also an architectural overview or the whole project for better conceptualization)
- Objectives of the Study
- Scope and Limitation of the Study (Manageability of the Study)
 - What are the limits and boundaries of the study? What can be expected to be included or not included in the study?
- Activities and Timelines (in Gantt Chart Form)
 - Candidates must present a timetable presented in Gantt chart with tentative data gathering instruments (e.g. questionnaires, guide questions for the interview/focus group discussion).
- Target Output
- References

PARAMETERS

- A. The formulation of the topical research shall commence at the start of the academic year (on a semester basis) and the title defense shall begin as prescribed by the Capstone Instructor and approved by the Dean. The title defense shall be attended by a set of distinct panel which will include the Capstone Instructor/s, the Program Coordinator, the Dean, and additional members of the panel (DHVSU Lubao Campus faculty members).
- B. For the title defense, each Capstone Project Group is encouraged to come up, formulate and present a maximum of three (3) capstone project titles to be recommended and approved by the distinct panel. (Note: the Capstone Chairman may

- set a theme for the Capstone Project Proposals as agreed upon by the Capstone Committee or aligned the Capstone Project Proposals on the University Target Research).
- C. It is a requisite that Capstone Project Groups should have a working and approved capstone title before they will be allowed to move on to the next phase of the capstone development.
- D. No show on the scheduled defense shall automatically mean a failing remark for the Capstone Project Group. No rescheduling of the defense shall be arranged.
- E. Capstone Project Group should be on the defense venue one (1) hour before the schedule to avoid further delays in the oral defense. Any Capstone Project Group who fails to show up one hour before the scheduled time shall no longer be allowed to have their oral defense.
- F. At the end of the semester, the approved Capstone Project must be completed with Introduction and Methodology.

PHASE II: MOCK ORAL DEFENSE

By second semester within which the Capstone Project course is enrolled, the group is required to submit Gantt charts and Progress Report (with supporting documents and evidences e.g. Adviser's Consultation Form) for the completion of the study. The deliverable at the end of this stage is an approved proposal that includes a partial Capstone Project document covering the Introduction, Methods, and Results and Discussion, and the system that is at least 90% functional and working.

In this phase, the candidates must have accomplished a **Form 1** with an Adviser who does the recommending and approving of every deliverables to be submitted. The candidates are also required to present the tentative data gathering instruments; e.g. questionnaire, interview guide or focus group discussion, outline of key areas for documentary analysis, etc. this is to ensure that the candidates are fully prepared to begin the task and will efficiently use the time available for advising and consultation.

PARAMETERS

- A. Pre-requisite to the Mock Oral Defense will be a working study duly defended and approved by the set of jurors.
- B. The Capstone Project Group is only eligible for Mock Oral Defense only if the Capstone Adviser had duly signed the Recommendation for Oral Examination Form, otherwise, the capstone project shall be deemed unaccepted for oral defense.
- C. The schedule for defense of the Capstone Project Proposal may be made only after three (3) copies of the Capstone Project Proposal have been submitted to the College and distributed to the Capstone Jurors.
- D. Capstone Group should be in the venue one hour before the schedule to avoid further delays. Late groups will not entertained and will be scheduled for an automatic re-defense. No show means automatic failing grade.

PHASE III. FINAL ORAL DEFENSE

Final capstone project II involves the capstone project defense. This is the continuation of the mock oral defense with the addition of the accomplishments based on the

recommendations of the jurors and conclusions of the study. It includes full documentation of the project. The following are the deliverables at the end of this stage:

- Form 6 from the Academic and Technical Advisers
- The complete Capstone Project document including the Technical Manual and User's Manual
- Information System/Mobile Application and/or Game with the following requirements:

For Web-based Information Systems

- With Domain Name and Hosting
- Responsive to smart phone browser

For Mobile Application or Game

- With original character, voice, sound effects and background
- With credits for modified sprites or background
- Uploaded for free download of users (e.g. Google Playstore).

For Arduino and System Integration with third party devices

- Working prototype
- Updated firmware of devices

In preparation of the Final Oral Defense, the group **consolidate all preliminary feedback given during the Mock Oral Defense**. It is recommended that the group can consult informally to the jurors based on their recommendations before producing the final report in order to solicit comments, inputs and suggestions. Necessary revisions, inclusions or adjustments are made prior to preparation of the Final Report, which will be submitted for Final Oral Defense.

PARAMETERS

- A. Capstone Project Final Oral Defense commences only after all requirements, recommendations and revisions as required by the jurors during the previous phases has been made.
- B. The Capstone Project Group is only eligible for Final Oral Defense only if the Capstone Adviser had duly signed the **Form 6**, otherwise, the capstone project shall be deemed unaccepted for oral defense.
- C. The schedule for defense of the Capstone Project Proposal may be made only after three (3) copies of the Capstone Project Proposal have been submitted to the College and distributed to the Capstone Jurors.
- D. At least five (5) working days is given to the juror members to study the Final Report before the schedules of the oral defense.
- E. The Capstone Project Groups are required to settle all accounts and final defense fee before the date of the oral defense.

Concluding the Preparation of the Capstone Project Final Report

- All changes, revisions or adjustments to the Final Report which was defended before the juror is based on the Recommendation/Revision Form or summary of minutes of the oral defense. The Capstone Chairman provides the group a copy within three (3) working days after the oral defense.
- The capstone adviser insures that the jurors' requirements of the Capstone Project are implemented.
- If the Capstone Project Group is not confident in their use and control of their English language and the discipline of technical writing, they may employ or ask for an editor's help/advice. Installing of grammar checker (e.g. Grammarly) may be used as grammar checker. Also if the capstone project require statistical analysis, a statistician may also require to employ or seek help.
- The Capstone Project Group is mandatory to check for any plagiarism to a plagiarism check software and need to comply within the needed limit of plagiarism percentage before final printing. A soft copy of the documentation must be submitted to the person in charge of the plagiarism checking. After the check, the plagiarism checker will give a certificate of plagiarism to the group if the compliance is met, else the group must revise the document further until the percentage will met. A certification from both the English Editor and Statistician is required declaring that the manuscript is free from grammar and technical errors.
- Before the final printing and reproduction of the Final Report, the group secures approval from their advisers and submits a complete copy of the manuscript to the College Dean who in turn, is given as scheduled for the final review of the documentation.

SCOPE OF DUTIES AND RESPONSIBILITIES

The Capstone Group

- A Capstone Project is a group's original work and is solely responsible for its content.
- The group is responsible in finding a faculty member or an industry practitioner duly authorized by the CCS dean to agree to serve as their Capstone Adviser and Technical Consultant.
- The group is expected to work closely with the Capstone Adviser. The two parties
 must mutually agree on a Capstone Project and the scope of work required for
 completing other details of the study.
- The group have the following responsibilities:
 - To adhere to the standards concerning appropriate approval forms and the format for the Capstone Project documentation or manuscript.
 - To be aware of the Capstone Project Guidelines and Policies.
 - To be aware of the schedule of capstone project activities, required deliverables and deadlines posted by Capstone Instructor.
 - To adhere to the scheduled regular consultations (at least twice a week) with Capstone Adviser throughout the duration of the capstone project. The consultations serve as a venue for the group to report the progress of their work, as well as raise any issues or concerns. All consultation must be properly documented by accomplishing the Form 2 – Adviser's Consultation Form.
 - To present the capstone project documentation and system prior to every defense in order for the Capstone Adviser to assess whether to sign the Recommendation for Oral Defense or not. This will be confirmed by signing the Form 6.
 - To submit all requirements and deliverables ON TIME as required by the Capstone, Instructor, Capstone Project Committee and Capstone Adviser.

The Capstone Instructor

The Capstone Project is prepared under the guidance of a Capstone Instructor.

- As a general rule, Capstone Instructor should handle at most five (5) Capstone Group per Capstone class/section.
- Capstone Instructor can be a Capstone Adviser provided it is not his/her Capstone class/section.
- The Capstone Instructor has the following responsibilities:
 - To assist the Capstone Groups in complying with the Institute's regulations and standards.
 - To discuss project/research areas (at the start of each semester) to the students.
 - To discuss the Capstone Project Guidelines, Policies and Deliverables and to allow the students to raise and clarify issues;
 - To guide students in data gathering, literature search and writing the capstone project document or manuscript.
 - To provide list of potential Capstone Adviser to the Capstone Groups and assign a Capstone Adviser when necessity arise.

- To draft the members of the defense panel for each Capstone Project group.
- To schedule capstone project activities, such as the deadlines of deliverables and defense sessions.
- To post schedules, defense guidelines, requirements guidelines, and other announcements for the students and faculty members.
- To furnish each group of the defense panel with all the necessary Capstone Project documents before the defense.
- To file at least one copy of the defense panel's evaluation (including revisions) and the revised and approved deliverables at every stage of the Capstone Project.

The Capstone Instructor must possess any one of the following qualifications:

- Master's degree in an ITE program
- Master's degree in an allied program and at least three years of IT work/consultancy experience or at least three years of ITE teaching experience beyond computer literacy
- Completion of coursework/academic requirements for a master's degree in any ITE programs and have completed an IT/IS/CS project beyond the BS Degree Capstone Project or have experience in systems design, applications programming, IT project management, or information technology research
- A Full-time faculty member of the institution otherwise a Full-time co-adviser is required.

The Capstone Adviser

The Capstone Adviser checks the Capstone Project for consistencies in adhering to the modeling rules and paradigms of an ICT project, congruency of the capstone project with the capstone manuscript and user acceptability.

- As a general rule, the number of Capstone Group handled by a Capstone Advisers are as follows:
 - Total number of Capstone Group a Faculty can be handled are aggregate from inside and outside the University.
 - Faculty with Master's Degree can handle at least one and maximum of three capstone advisee
 - Faculty without Master's Degree can handle at least one and maximum of two capstone advisee
- To lessen the biased and to upheld the quality of advising for every Capstone Group, the table below can be a guide in distribution of Advising and Paneling:

	Maximum Total Advising and				
EDUCATIONAL ATTAINMENT	Paneling				
EDOCATIONAL ATTAINMENT	ADV	ADVISING		PANELING	
	IN	OUT	IN	OUT	
Bachelor's Degree (BD)	1	1	5	5	
BD with Units in MA	2	1	6	5	
BD With Complete Academic Units In MA	3	1	7	5	
MA Under Capstone Writing	4	2	8	5	
Master's Degree	5	3	9	5	
MA With Doctorate Units	6	4	10	5	
MA With Complete Academic Units In DIT	7	5	11	5	
DIT under Dissertation	8	6	12	5	
Doctorate Degree	10	7	15	5	

Note: Maximum number of advisee can exceed depending on the recommendation and approval of the Dean.

- The Capstone Adviser should be an ICT industry practitioner, an ICT faculty member from another college or university or a faculty member of CCS.
- The Capstone Adviser has the following responsibilities:
 - To assist the students in complying with the deliverables of the capstone project as agreed and demanded upon by the project users and the jurors.
 - To set the direction of the capstone project design, user requirements analysis, and congruence of the Capstone Project with the Capstone Manuscript or Documentation.
 - To allot a substantial amount of time for directing the capstone project towards meeting the documented requirements and testing the capstone project for user acceptability.
 - To thoroughly review all deliverables at every stage of the capstone project so as to ensure that the group meets the college standards. The Capstone Adviser should also require his/her project paper group to submit progress reports regularly.
 - To recommend the Capstone Group for oral defense. The Capstone Adviser should not sign the Form 6 if he/she believes that the Capstone Group is not yet ready for presentation.
 - To check the capstone project documentation's consistency with the system prior to any scheduled defense.
 - To clarify points during the oral defense.
 - To ensure that all required revisions are incorporated into the documents and/or software.

The Capstone Adviser must possess any one of the following qualifications:

- Master's degree in an ITE program
- Master's degree in an allied program and at least three years of IT work/consultancy experience or at least three years of ITE teaching experience beyond computer literacy

- Completion of coursework requirements for a master's degree in any ITE programs and have completed an IT/IS/CS project beyond the BS Degree Capstone Project or have experience in systems design, applications programming, IT project management, or information technology research
- A Full-time faculty member of the institution otherwise a Full-time co-adviser is required.
- An ICT industry practitioner who specializes in the project being developed by the capstone group. If the technical consultant is not a part of the ICS, the dean's approval is required.

The Capstone Project Jury (Defense Panelist)

The Capstone Project Jury is formed to guide and ensure that the students meet the quality standards as determined by the Institute of Computing Studies' officials and faculty members.

Selection

The defense panel members should be composed of three voting members of the College. One of whom would act as the Chairman. In special cases, the Dean appoints a member of the panel from an external unit provided his research area is related to the proposed study.

The composition of the panel must possess any one of the following qualifications:

- A degree in an ITE or allied program
- At least one panel members must have a master's degree in ITE (preferably IT/IS/IM) or allied program
- At least one panel member must have an industry experience or training relevant to the capstone project.

The composition of the defense panel must be retained, as much as possible, throughout the stages of the Capstone Project.

Responsibilities

- Come on the scheduled defense on time.
- Approval of the Capstone Project is the responsibility of the examining committee appointed by the Dean's Office upon the recommendation of a Capstone Project Adviser.
- Evaluate the deliverables.
- Recommend a verdict.
- Deliberate and consider the request of the Capstone Instructor, Capstone Adviser and/or the capstone project group.
- Must certify that the Capstone Project conforms to the format prescribed in the Guide for Preparation of a Bachelor's Capstone Project and approve the method of duplication.

 Nominate a Capstone Project for the Best Capstone Project Award. Guidelines for the Outstanding Capstone Project Award will be provided separately.

The LEAD JUROR has the following responsibilities:

- Brief the Capstone Project proponent about the program during the actual defense.
- Announce the verdict.

GRADING SYSTEM OF CAPSTONE PROJECT

Capstone Project Grade is the combination of the given grade of the Capstone Instructor, Capstone Adviser and Capstone Jury with the following criterion:

Capstone 1 – Midterm Grade

$$MG = (CI * 15\%) + (CA * 15\%) + (CJ *70\%)$$

Capstone Instructor (15%)	Capstone Adviser (15%)	Capstone Jury (70%)
 a. Attendance b. Compliance to Deliverables c. Timeliness of Submissions d. Written/Online Examination/s 	a. Attendance on Consultation b. Individual/group overall performance	Title Defense Grade

Capstone 1 – Final Grade

$$FG = (CI * 50\%) + (CA * 50\%)$$

	Capstone Instructor (50%)		Capstone Adviser (50%)
a.	Attendance	a.	Attendance on Consultation
b.	Compliance to Deliverables	b.	Individual/group overall performance
c.	Timeliness of Submissions	c.	Mock Defense
d.	Written/Online Examination/s		

Capstone 1 – Semestral Grade

SG = Average (MG + FG)

Note: Capstone Project Committees' Grade is deemed final and irrevocable.

Capstone 2 – Midterm Grade

$$MG = (CI * 15\%) + (CA * 15\%) + (CJ *70\%)$$

Capstone Instructor (15%)	Capstone Adviser (15%)	Capstone Jury (70%)
 e. Attendance f. Compliance to Deliverables g. Timeliness of Submissions h. Written/Online Examination/s 	c. Attendance on Consultationd. Individual/group overall performance	Mock Oral Defense Grade

Capstone 2 – Final Grade

Capstone Instructor (15%)	Capstone Adviser (15%)	Capstone Jury (70%)
 i. Attendance j. Compliance to Deliverables k. Timeliness of Submissions l. Written/Online Examination/s 	e. Attendance on Consultation f. Individual/group overall performance	Final Oral Defense Grade

Capstone 2 – Semestral Grade SG = Average (MG + FG)

Note: Capstone Project Committees' Grade is deemed final and irrevocable.

- An approved working title is a pre –requisite to pre –orals and final oral defense.
- A failed overall grade in the final defense shall be equivalent to a failing semestral grade. All midterm grades shall bear no weight should the accumulated final oral defense grade is equal to failing.
- Schedule of re-defense shall be 1 week after the scheduled defense (Pre-oral, and Final Oral Defense).
- Re-defense is only given once. When no progress or development is manifested based on the recommendations of the panel after the re-defense, the grade will be marked a failure.
- Re-defense Grade for successful Capstone Group is automatically 75.

CAPSTONE PROJECT REPORT AND DOCUMENTATION GUIDELINES

Part I – Preliminaries

Title Page

The Title Page lists a brief descriptive title of the project, names of the individuals submitting the final report, the date of submission, academic division/institution and additional information as may be required.

A Capstone Project Title is a distinguishing name given to a work or project describing the scope in a specific context and indicates the content of the paper. The title of the report should present the main topic of the project in a concise, and, as appropriate, distinctive manner. It must be broad enough to include all the main concepts involved in the study or to be studied.

Adviser's Recommendation Sheet

This section provides space for the signature of the proponent's adviser indicating that he has examined and recommended the Capstone Project for acceptance and approval. No final Capstone Project documentation will be accepted unless all copies are duly signed by the Technical Advisor and Instructor/Critic.

Panel's Approval Sheet

The approval sheet provides space for the signatures of the members of the panel indicating their acceptance of the work. No final Capstone Project documentation will be accepted unless all copies are duly signed by all the members of the defense panel and the Dean.

Acknowledgement

This section contains the author's statement expressing appreciation and gratitude to those who have assisted and supported the preparation and conceptualization throughout the completion of the Capstone Project. This page also mentions any sources and permission obtained to quote copyrighted materials. Acknowledgements must be written in a single page and should be expressed in simple and tactful descriptions of the contributions of the acknowledgements.

Dedication

This section contains the author's statement expressing honor or affection for someone who have assisted and supported the preparation throughout the completion of the Capstone Project. Dedication must be written in a single page and should be expressed in simple and tactful descriptions of the appreciation.

Abstract

The abstract is written in a paragraph form in not more than 150-300 words which briefly summarize the contents of the entire Capstone Project. Words should be clear and concise. It should briefly describe: 1) the rationale, background and focus of project; 2) the methods utilized in the project; 3) a summary of the results of the project and; 4) conclusions and recommendations. The abstract of a Capstone Project becomes a public record of the school. The Dean's Office collects and binds the Reports and made available to other students in the school library. These abstracts serve as a measure of the quality of scholarly work expected at Don Honorio Ventura State University.

Table of Contents

This page lists the major parts and sections as labeled in the report, including the preliminary pages and the text. Each item listed should have reference to the page number where that item starts in the report.

List of Figures/List of Tables/List of Notations

The final report must be supported with figures, graphs, tables, notations, numbered lists, drawings, etc. These should have self-contained captions and integrated into the body of the report used to present and summarize data in a clear and concise manner.

- Tables are numbered sequentially.
- Table labels are placed above the table but the captions are placed below the table.
- Figures (charts, graphs, drawings, pictures) are similarly numbered sequentially.
- Figure labels and captions are placed below the figure.

Part II - Text

Below is the common format of paper used for publication by the University abides to IMRaD (Introduction, Method, Results, and Discussion) format guidelines.

SECTION	ELEMENTS	GUIDELINES
ABSTRACT	Nature and Scope of the paper Objective or purpose	 ✓ States what the paper is all about and the boundaries or limitations of the problem or situation ✓ States the rationale of the investigation
	Research method	 ✓ An account of the approaches / techniques to be described specifically but selectively & ✓ comprehensively
	Results/Findings	✓ Describes the findings concisely, identified w/ important numerical values when necessary

SECTION	ELEMENTS	GUIDELINES
	Conclusion	✓ Based on the results and discussion, conclusions are given w/ suggested future courses of action
INTRODUCTION	Trends in your Topic	✓ Discuss the current trends in your topic. It primarily answers the question "What are the most important issues for this topic in terms of the goals of the project and the effects in society"?
	Issues arising from the trend	 ✓ Consists of the things that become problematic in your topic with the existence of the issues(things affected by the topic) ✓ Contains the rationale why the topic is being researched on ✓ Identify the research gap ✓ this may present some background information; overall trends and references to studies and literature pertinent to the topic of the project ✓ Discuss the issues from Global Reality > National Reality > Local Reality > Focal Reality approach
	Objectives of the Paper	 ✓ Discuss the things that you plan to do to resolve the issue/s ✓ It must name the specific and concrete – if possible, measurable – accomplishments (external and personal) intention of the project. It should answer: "What, exactly, the project is going to accomplish, produce, and/or deliver? It also includes the necessary deliverables and defines a reasonable scope of work.
	Scope and Limitation of the Study	 ✓ Discuss the limitation or restriction of the study that is beyond the researchers concern. ✓ Scope and limitations pertaining to the research define the restrictions placed on the study to make it doable. ✓ Discuss first the Scope followed by the limitation/s.

SECTION	ELEMENTS	GUIDELINES
THEORETICAL	Contribution/Signi ficance of the Study Theoretical	 ✓ Discuss things that will happen once the issues are addressed. ✓ Involves the persons to whom the results of the paper will be relevant
BACKGROUND	framework	 ✓ Provides a strong underpinning or substantive ✓ explanation or foundation of the main or central question of the study ○ Statement of the theory ○ Explanation of the theory ○ Contextualization of the use of the theory in the study. ✓ (How can the theory help achieve the objectives of the study?)
	Review of related literature	Contains the synoptic and argumentative part of the study Synoptic part — contains the operational definition of the variables used in the study and its relationship with other variables (correlations, differences and effects) and/or its historical background as revealed by previous literature Argumentative part — contains the sentence of problematizing or the need for the study that leads to the hypotheses of the study
	Conceptual framework	Indicates, either graphically or in narrative form, the main things to be studied—the key factors, constructs or variables and hypotheses
METHOD	System Development Methodology Design	 ✓ Discuss in general on what type of design will be used ✓ Discuss why the design is the most appropriate to use ✓ Discuss the System Development Life Cycle (SDLC) briefly ✓ Discuss briefly the Development Model (e.g. Prototyping, RAD) to be used in developing the system. ✓ Discuss in details what are the action/s that are involve in the model?

SECTION	ELEMENTS	GUIDELINES
	Research Instruments Organizational Assessment of Subjects	 ✓ Discuss the tools (e.g. Questionnaire Survey, Interview questionnaire) used for data gathering ✓ Discuss the evaluation tool instrument/s (e.g. ISO/IEC 25010, ISO 9126) to be used ✓ Identify the respondents / subjects of the study and how they are chosen Indicate the inclusion / exclusion criteria in the selection of
	Required Specification and Analysis	respondents ✓ Discuss and explains what the program/system will do from the user's perspective. ✓ Discuss all business processes which includes the developer/s and clients' requirements ✓ Show the analysis tools to illustrate the existing and the proposed system as well as the requirements of the project. ○ Visual Table of Contents ○ Data Flow Diagrams (Context and Level 0) ○ Entity-Relationship Diagram ○ System Flowchart ○ Program Flowchart ✓ Discuss the system design specification at the point of view of the developer/s. ✓ Identify the list of algorithms that will be used, major data structures, list of major functions, their interrelationships, and the steps that will be used to develop the program (Forms, Reports, User Interface) ✓ Discuss and give the Software Requirements Specification (SRS) document which describes the complete external behavior of the software in the development and implementation of the system ○ Software Specification ○ Hardware Specification
	Implementation Plan	✓ Discuss on how will the proposed system will be implemented

SECTION	ELEMENTS	GUIDELINES
		 ✓ Identify and discuss on how the old system will be cease and convert it into the new system, training of the users and turnover of the system for a full operational system. ✓ Discuss the Testing and Evaluation of the system with a comparison of the old and new system after implementation. ✓ Create an economic analysis report that will show a savings to the sponsor after the recommended capital/implementation expenses have been accounted for.
RESULTS	Tables and figures	 ✓ Show the results of the study in tabular or graphical form ✓ Labeling and Numbering must properly observed o Table Captions are ABOVE the Tables o Figure Captions are BELOW the Figures
	Presentation of tables and figures Analysis of tables and Figures	 ✓ Introduce in statement form what the table or figure is all about ✓ Highlight the most salient aspects of the table or figure ✓ (highest-lowest, most striking-least striking) ✓ Indicate the numerical values of significant relationships being highlighted in parenthesis
DISCUSSIONS		 ✓ Have a one-sentence summary of the study findings ✓ Explain the connection of the findings through cross- referencing ✓ Explain the connection of the findings through bold attempt ✓ Discuss the implications of the findings to theory, research and findings
CONCLUSIONS		 ✓ Recall of the study objectives ✓ Statement of the major findings of the study ✓ Discussion of the study conclusions'

SECTION	ELEMENTS	GUIDELINES
REFERENCES	Use APA style	 ✓ Implication to theory, research and practice ✓ Statement of what the paper has achieved ✓ Statement of what the paper can promise All references must strictly follow the American Psychology Association (APA) latest Edition
APPENDICES	Attachments	Sample Letters Diagrams/Models Evaluation tools (alpha test, beta test, data gathering) Certificate of Statistical Treatment Certificate/Result of the Plagiarism Check Certificate of Language Editing Sample I/O (Interface) results Source Code User's Manual Curriculum Vitae

GENERAL FORMATTING AND STYLE

The Capstone Project Documentation should adhere to the following standards and format.

General Capstone Format Guidelines

I. General Document Guidelines

- A. *Margins:* 1.50 inch left margin, one inch on the remaining sides (top, bottom, right)
- B. *Font Size and Type:* 12-pt. Times New Roman (TNR) for Heading and Titles, 11-pt. TNR for Body/Paragraph
- C. *Line Spacing:* 1.15, 0-pt before and after, throughout the paper. Skip one line between the Heading/Title and the Paragraph
- D. **Spacing after Punctuation**: Space *once* after commas, colons, and semicolons within sentences. Insert two spaces after punctuation marks (e.g. exclamation mark (!), question mark (?), and period (.)) that end sentences.
- E. Alignment: Justified
- F. **Pagination**: The page number appears one inch from the upper right corner of the paper on the first line of every page.

II. Abstract

The abstract is a one-paragraph, self-contained summary of the most important elements of the paper.

- A. *Pagination*: The abstract begins on a new page before the Introduction section.
- B. **Heading**: "ABSTRACT" (centered on the first line below the running head)
- C. Format: The abstract (in block format) begins on the line following the Abstract heading. The abstract word limit is set by individual journals. Typically, the word limit is between 150 and 250 words. All numbers in the abstract (except those beginning a sentence) should be typed as digits rather than words.

III. Body

- A. **Pagination**: Subsections of the body of the paper do *not* begin on new pages.
- B. *Title*: The subsection title (in propercase letter) is left aligned.
- C. **Column:** The document will be in two (2) columns except the Abstract Section and Appendices

IV. Text citations

Source material must be documented in the body of the paper by citing the author(s) and date(s) of the sources. The underlying principle is that ideas and words of others must be formally acknowledged. The reader can obtain the full source citation from the list of references that follows the body of the paper.

A. When the names of the authors of a source are part of the formal structure of the sentence, the year of publication appears in parentheses following the identification of the authors. Consider the following example:

Wirth and Mitchell (1994) found that although there was a reduction in insulin dosage over a period of two weeks in the treatment condition compared to the control condition, the difference was not statistically significant.

[Note: and is used when multiple authors are identified as part of the formal structure of the sentence. Compare this to the example in the following section.]

B. When the authors of a source are *not* part of the formal structure of the sentence, both the authors and year of publication appear in parentheses. Consider the following example:

Reviews of research on religion and health have concluded that at least some types of religious behaviors are related to higher levels of physical and mental health (Gartner, Larson, & Allen, 1991; Koenig, 1990; Levin & Vanderpool, 1991; Maton & Pargament, 1987; Paloma & Pendleton, 1991; Payne, Bergin, Bielema, & Jenkins, 1991).

[Note: & is used when multiple authors are identified in parenthetical material. Note also that when several sources are cited parenthetically, they are ordered alphabetically by first authors' surnames and separated by semicolons.]

C. When a source that has two authors is cited, both authors are included every time the source is cited.

D. When a source that has three, four, or five authors is cited, all authors are included the first time the source is cited. When that source is cited again, the first author's surname and "et al." are used. Consider the following example:

Reviews of research on religion and health have concluded that at least some types of religious behaviors are related to higher levels of physical and mental health (Payne, Bergin, Bielema, & Jenkins, 1991). Payne et al. (1991) showed that ...

- E. When a source that has six or more authors is cited, the first author's surname and "et al." are used every time the source is cited (including the first time).
- F. Every effort should be made to cite only sources that you have actually read. When it is necessary to cite a source that you have not read ("Grayson" in the following example) that is cited in a source that you have read ("Murzynski & Degelman" in the following example), use the following format for the text citation and list only the source you have read in the References list:

Grayson (as cited in Murzynski & Degelman, 1996) identified four components of body language that were related to judgments of vulnerability.

- G. To cite a personal communication (including letters, emails, and telephone interviews), include initials, surname, and as exact a date as possible. Because a personal communication is not "recoverable" information, it is not included in the References section. For the text citation, use the following format:
 - B. F. Skinner (personal communication, February 12, 1978) claimed ...
- H. To cite a Web document, use the author-date format. If no author is identified, use the first few words of the title in place of the author. If no date is provided, use "n.d." in place of the date. Consider the following examples:

Degelman (2009) summarizes guidelines for the use of APA writing style.

Changes in Americans' views of gender status differences have been documented (*Gender and Society*, n.d.).

I. To cite the Bible, provide the book, chapter, and verse. The first time the Bible is cited in the text, identify the version used. Consider the following example:

"You are forgiving and good, O Lord, abounding in love to all who call to you" (Psalm 86:5, New International Version). [**Note:** No entry in the References list is needed for the Bible.]

V. Quotations

When a direct quotation is used, always include the author, year, and page number as part of the citation.

A quotation of fewer than 40 words should be enclosed in double quotation marks and should be incorporated into the formal structure of the sentence. Consider the following example:

Patients receiving prayer had "less congestive heart failure, required less diuretic and antibiotic therapy, had fewer episodes of pneumonia, had fewer cardiac arrests, and were less frequently incubated and ventilated" (Byrd, 1988, p. 829).

A. A lengthier quotation of 40 or more words should appear (without quotation marks) apart from the surrounding text, in block format, with each line indented five spaces from the left margin.

VI. References

All sources included in the References section must be cited in the body of the paper (and all sources cited in the paper must be included in the References section).

- A. **Pagination**: The References section begins on a new page.
- B. **Heading**: "References" (centered on the first line below the running head)
- C. **Format**: The references (with hanging indent) begin on the line following the References heading. Entries are organized alphabetically by surnames of first authors. Most reference entries have the following components:
- 1. Authors: Authors are listed in the same order as specified in the source, using surnames and initials. Commas separate all authors. When there are eight or more authors, list the first six authors followed by three ellipses (...) and then the final author. If no author is identified, the title of the document begins the reference.
- 2. Year of Publication: In parentheses following authors, with a period following the closing parenthesis. If no publication date is identified, use "n.d." in parentheses following the authors.
- 3. Source Reference: Includes title, journal, volume, pages (for journal article) or title, city of publication, publisher (for book). Italicize titles of books, titles of periodicals, and periodical volume numbers.
- 4. Electronic Retrieval Information: Electronic retrieval information may include digital object identifiers (DOIs) or uniform resource locators (URLs). DOIs are unique alphanumeric identifiers that lead users to digital source material. To learn whether an article has been assigned a DOI, go to http://www.crossref.org/guestquery/.

D. Example of APA-formatted References: Go to

http://www.vanguard.edu/uploadedFiles/Psychology/references.pdf

E. Examples of sources

1. Journal article with DOI

Murzynski, J., & Degelman, D. (1996). Body language of women and judgments of vulnerability to sexual assault. *Journal of Applied Social Psychology, 26*, 1617-1626. doi:10.1111/j.1559-1816.1996.tb00088.x

2. Journal article without DOI, print version

Koenig, H. G. (1990). Research on religion and mental health in later life: A review and commentary. *Journal of Geriatric Psychiatry*, 23, 23-53.

3. **Journal article without DOI, retrieved online [Note:** For articles retrieved from databases, include the URL of the journal home page. Database information is not needed. Do not include the date of retrieval.]

Aldridge, D. (1991). Spirituality, healing and medicine. *British Journal of General Practice*, *41*, 425-427. Retrieved from http://www.rcgp.org.uk/publications/bjgp.aspx

4. Book

Paloutzian, R. F. (1996). *Invitation to the psychology of religion* (2nd ed.). Boston, MA: Allyn and Bacon.

5. Informally published Web document

Degelman, D. (2009). *APA style essentials*. Retrieved from http://www.vanguard.edu/faculty/ddegelman/detail.aspx?doc_id=796

6. Informally published Web document (no date)

Nielsen, M. E. (n.d.). *Notable people in psychology of religion*. Retrieved from http://www.psywww.com/psyrelig/psyrelpr.htm

7. Informally published Web document (no author, no date)

Gender and society. (n.d.). Retrieved from http://www.trinity.edu/~mkearl/gender.html

8. Abstract from secondary database

Garrity, K., & Degelman, D. (1990). Effect of server introduction on restaurant tipping. *Journal of Applied Social Psychology, 20,* 168-172. Abstract retrieved from PsycINFO database.

9. Article or chapter in an edited book

Shea, J. D. (1992). Religion and sexual adjustment. In J. F. Schumaker (Ed.), *Religion and mental health* (pp. 70-84). New York, NY: Oxford University Press.

10. Diagnostic and Statistical Manual of Mental Disorders

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

VII. Tables

A common use of tables is to present quantitative data or the results of statistical analyses (such as ANOVA). See the *Publication Manual* (2010, pp. 128-150) for detailed examples. Tables must be mentioned in the text.

- A. **Pagination**: Each Table begins on a separate page.
- B. **Heading**: "Table 1" (or 2 or 3, etc.) is typed flush left on the first line below the running head. Double-space and type the table title flush left, Italics (in uppercase and lowercase letters).

College of Computing and Information Sciences. (2018). MIT Capstone Project Manual (4th

ed.). Angeles City: Systems Plus College Foundation.

- College of Computing Studies. (n.d). Capstone Project/Thesis Manual. Bacolor: Don Honorio Ventura State University.
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- Degelman, D. (2017). Vanguard University of Southern California. Retrieved August 6, 2020, from https://www.vanguard.edu/uploaded/research/apa_style_guide/apastyleessentials.pdf
- Institute Of Computing Studies. (2018). *Capstone Manual* (4th ed.). Mabalacat City: Mabalacat City College.
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APPENDICES

- A. Form 1 Commitment and Agreement Form
- B. Form 2 Advisers Consultation Form
- C. Form 3 Capstone Project Committee Consultation Form
- D. Form 4 Capstone Adviser's Grade Form
- E. Form 5 Request Form for Oral Examination
- F. Form 6 Recommendation Form for Oral Examination
- G. Guidelines for Evaluators
- H. Form 7 Evaluation Form Title Defense
- I. Form 8 Evaluation Form Mock Oral Defense
- J. Form 9 Evaluation Form Final Oral Defense
- K. Form 10 Capstone Project Evaluation and Recommendation Form
- L. Form 11 Online Oral Examination Request Form

Appendix A

Capstone Adviser's and Capstone Group Commitment and Agreement Form



Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY Bacolor, Pampanga

LUBAO EXTENSION CAMPUS
COLLEGE OF COMPUTING STUDIES



Form 1

CAPSTONE ADVISER'S AND CAPSTONE GROUP COMMITMENT AND AGREEMENT FORM

Bachelor of Science in Information Technology

Semester A.Y.

This agreement is binding the Capstone Project Group and their chosen technical adviser for the duration and completion of their study. As an agreement, the following will be expected from the group and their technical adviser:

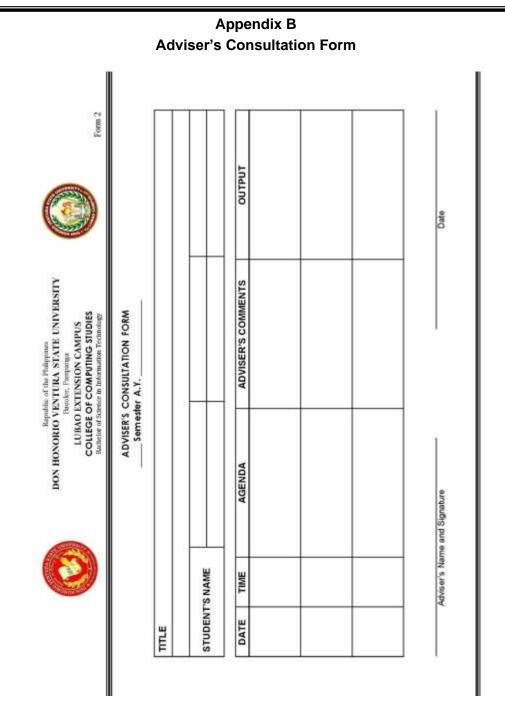
- The Capstone Project Group is required and expected to exert efforts ad skills to complete the given task.
- The Capstone Project Group agree to comply with the requirements of the technical teacher and adviser in their full capacity.
- The Capstone Project Group are compelled to see their technical advisers for technical advising and recommendations. A schedule should be made and agreed by both parties for their conferences and meetings to oversee the progressive elaboration of the project.

Whereas, the technical adviser is expected to perform the following duties as part of their commitment with their technical advisers:

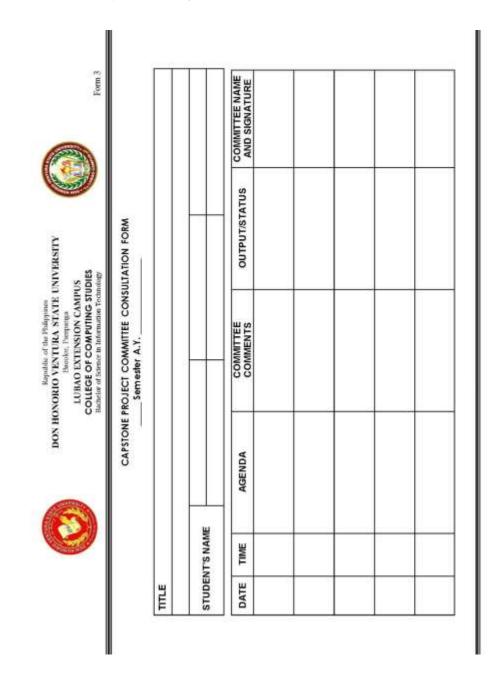
- The technical adviser is expected to mentor and guide their Capstone Advisee/s. Proper and appropriate guidance in preparing and completing their study is being sought from you.
- Periodic Schedule and meeting is expected to be given out by the technical adviser to their technical advisee/s to oversee progress and development.
- The technical adviser shall be the source of support of the group to ensure that the Capstone Project achieves the objective at the end of the given period.

By affixing your signature, it is deemed that you abide by all the duties and responsibilities set forth.

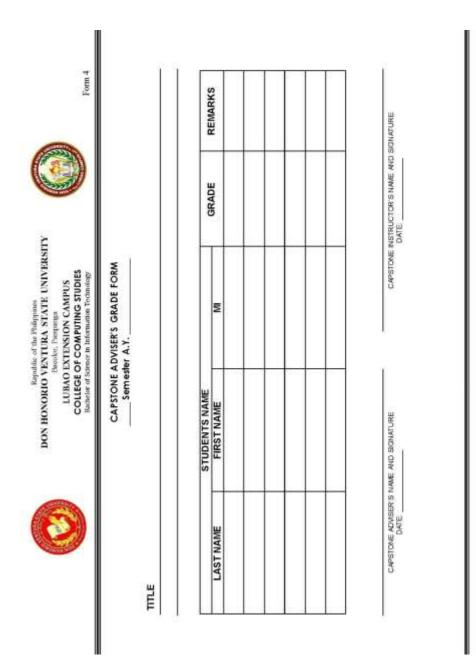
Name of Student	Signature
	: ±
	W <u></u>
itle:	
Technical Adviser's Name and Signature	Date



Appendix C Capstone Project Committee Consultation Form



Appendix D Capstone Adviser's Grade Form



Appendix E Request Form for Oral Examination



Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY

COLLEGE OF COMPUTING STUDIES

Bachelor of Science in Information Technology

Bacolor, Pampanga

LUBAO EXTENSION CAMPUS



Date

Form 5

Capstone Instructor's Name and Signature

Appendix F Recommendation Form for Oral Examination



Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY





Appendix G Capstone Project Guidelines for the Evaluator

DOCUMENT

- 1. Correctness of the statement of the research problem, objectives, review of the related studies, and framework
 - Statement of the problem
 - > Results/Outputs of the study have proven the solution to the statement of the problem.
 - > Statement of the research problem correctly states what has to be solved by the study.
 - Objectives state the correct solution(s) to the stated problem. Review of related studies discusses existing systems similar to the study (literature or software form)
 - Framework discusses all significant theories in computer science or information technology or information science which were essential in the development of the project; non-essential theories are not included
- 2. Clarity of defined requirements
 - > Requirements of the users have been clearly identified
 - Requirements identified are correct and complete
- 3. Completeness of analysis/discussions and consistency with design discussion (document content and organization)
 - > Discussions of the document and presentation are grammatically correct.
 - All the necessary concepts, ideas, outputs and relations, principles, and other elements which make the contents of the document whole and logical are discussed.
- 4. Correctness of the design and implementation issues with regard to the theories used in the study
 - ➤ A clear relation is seen between the theories discussed in the study and the design consideration of the system
 - Sound programming principles have been applied in the programming of the system and are discussed in the document.
- 5. Presence of citations for non- original material and sufficiency of the list of references used
 - Discussions which are not the original ideas / statements of members of the group are properly cited
 - The bibliographical listing contains adequate amount of references to help establish the authenticity of the study

METHODOLOGY

- 1. Definition and application of the software development methodology
 - ➤ The software development methodology (concepts and processes) is clearly described.
 - The software development methodology (notations and processes) is consistently used in the analysis, design, and implementation of the software
 - The software development methodology (notations and processes) is correctly used in the analysis, design, and implementation of the software
 - The software development methodology used in the study is clearly discussed in the analysis, design, and implementation section of this thesis are documented.
- 2. Appropriateness of research, data gathering, and analysis tools utilized
 - > The research tools utilized have generated the necessary data for the study
 - The data gathering tools utilized have generated a complete picture of the system under study
 - > The analysis tools utilized resulted to a complete and correct requirements specification
- 3. Appropriateness of the chosen methodology
 - The methodology applied results to the correct output(s) needed to solve the problem
- 4. Adequacy of the data gathered for the study
 - Data gathered for the study is sufficient to develop the correct analysis of the existing system
 - Data gathered for the study is sufficient to establish all necessary principles for correct design of the system
 - Data gathered for the study is sufficient to properly test the developed system.
 - > Data gathered for the study is sufficient to properly document the study
- 5. Adequacy, completeness, and effectiveness of the diagrams, graphs, charts, tables, and notation used
 - ➤ Tools/ Notation of existing methodologies are present in the discussion of the analysis and design
 - Appropriate tools/ notation are used
 - ➤ The system's analysis and design are clearly understood through the tools/notations used.

PRESENTATION

- 1. Clarity and organization of presentation delivery
 - ➤ Good use of allotted time
 - > All significant topics have been discussed
 - > Flow of discussion are appropriate
 - ➤ Discussion are clear and concise
 - ➤ Good use of the English Language

- 2. Adequacy of visual aids and other tools used for the presentation
 - ➤ Topics/ideas discussed have corresponding visual aids
 - Correct form and style of visual aids have been used
 - ➤ Content of visual aids and other tools facilitate understanding of the topic being discussed
- 3. Ability to answer questions analytically and convincingly
 - ➤ All answers to questions are logically correct
 - ➤ All answers to questions conform with established principle in IT
 - All members of the group are familiar with all the aspects of the study
 - ➤ Each member of the group has thorough understanding of the part contributed
- 4. Ability to convince the panelist of the ideas being presented
 - ➤ Each member of the group present ideas which panelist find acceptable
 - All the discussions made by the members of the group are logical.
- 5. Ability to discuss/ revise program modules as required by the panel members
 - > Each member of the group can thoroughly explain the contributed module
 - ➤ Each member of the group can thoroughly explain the relation of the contributed module to other module of the system.
 - ➤ Each member of the group is able to revise the contributed module according to the requirements of the panelist at any point in time

SOFTWARE

- 1. Executability of the software
 - > The software executes without errors
 - > The software performs the functions it has been designed and programmed to do
 - > The software is logically predictable
- 2. Ease of use/user friendliness
 - > The software can be used by the user with minimal amount of explanation or training
 - > The user interface allows for efficient use of the software
- 3. Ability to ensure data accuracy and validity
 - > The processes of the software maintain data integrity
 - The software performs validity and accuracy checks on data inputted, processed and outputted
 - > The software has the necessary security measures to ensure data accuracy and validity.
- 4. Effectiveness and efficiency of the software in meeting necessary user requirements and objectives of the study
 - > The software solves or addresses all identified requirements of the user
 - The software performs its functions in the least possible amount of time and Space

- 5. Completeness of software features /components /modules to meet user requirements and objectives of the study
 - All the user requirements are addressed through the functions of the software
 - All objectives of the study are addressed through the functions of the software
- 6. Completeness of software features /components /modules consistent with existing systems similar to study
 - The functions of the software are not lesser than the functions of existing software packages which are similar in nature
 - The software contains functions which are not present in the existing software packages of the similar Nature
- 7. Correctness and completeness of appropriate theories
 - The software has been developed utilizing the appropriate theories in software development
 - > All the necessary software development theories to design and implement the software have been applied
- 8. Consistency of design and implementation with the principles of software development
 - The design of the software is consistent with accepted theories in software development
 - > The implementation of the software is consistent with accepted theories in software development
- 9. Absence of errors
 - > The software executes without errors (run-time errors are absolutely not acceptable)
 - Modules are complete and free of errors
 - Comprehensive testing(from unit to integration testing) has been performed using valid test data
- 10. Results of the study
 - > The statement of the problem has been completely and correctly solved
 - ➤ The objectives of the study have been completely and correctly met
 - > The conclusions derived are correct
 - ➤ The recommendations are related to the accomplished work and are well within the bounds of existing and foreseeable technologies
 - The entire project has been accomplished completely and correctly to the members of the group.

Appendix H Oral Defense Evaluation Form – Title Defense



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LUBAO EXTENSION CAMPUS COLLEGE OF COMPUTING STUDIES





Form 7

ORAL DEFENSE EVALUATION FORM TITLE DEFENSE

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aps	tone Group Member's Name					
_	The state of the s					
istr	uctions to the Evaluator					
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	Place a check mark at the appropriate box given the following evaluation. Always affix your signature on the space provided below the form.	n sco	res.			
	No affixed signature shall invalidate the scores.					
~	Please use the recommendation form for your suggestions and recomme	endati	ons.			
D	11 D	-		3	-	-
1	1. Document Correctness of the problems identified.	5	4	3	2	1
2	Correctness of the statement of the objective.					
3	Clarity of defined requirements or (project justification)					
4	Correctness of the literature and studies used.	-				-
5	Correctness of the research methodologies used in the study.		-		_	-
6	Completeness and correctness of the required proposal content.					
O	Lucion becomes a construction of the control of the		-		_	_
0			4	3	2	1
	2. Presentation	5	. 4	3		
	Presentation Clarity and organization of presentation delivery.	5	4	3		L.
Par		5	-	3	Ē	-
Par	Clarity and organization of presentation delivery,	5	4	3		
Par 7 8	Clarity and organization of presentation delivery. Adequacy of visual aids and other tools used for the presentation.	5	4	3		
Par 7 8 9	Clarity and organization of presentation delivery. Adequacy of visual aids and other tools used for the presentation. Ability to answer questions analytically and convincingly.	5	4	3		

Appendix I Oral Defense Evaluation Form – Mock – Oral Defense



Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY Bacolor, Pampanga

LUBAO EXTENSION CAMPUS COLLEGE OF COMPUTING STUDIES





ORAL DEFENSE EVALUATION FORM MOCK – ORAL DEFENSE

	Ser	mester A.Y	
Title			
Capstone Group	Member's Name		

Instructions to the Evaluator

- ✓ Place a check mark at the appropriate box given the following evaluation scores.
- Always affix your signature on the space provided below the form.
 No affixed signature shall invalidate the scores.
- ✓ Please use the recommendation form for your suggestions and recommendations.

I.DOCUMENT	5	4	3	2	1
 Correctness of the statement of the research problem, objectives, review of related studies, and theoretical framework 					
Clarity of defined requirements					
 Completeness of analysis discussion and consistency with design discussion (document content and organization) 					
 Correctness of design and implementation issues with respect to the theories used in the study 					
Presence of citations for non- original material and sufficiency of the list of references used					
II.METHODOLOGY	5	4	3	2	1
Definition and application of the software development methodology					
Appropriateness of research, data gathering, and analysis tools utilized					
Appropriateness of the chosen methodology					
Adequacy of data gathered for the study					
 Adequacy, completeness, and effectiveness of diagrams graphs, charts, tables, and notations used 	\perp				
III. PRESENTATION	5	4	3	2	1
11. Clarity and organization of presentation delivery			-		
12. Adequacy of visual aids and other tools used for the presentation					
13. Ability to answer questions analytically and convincingly					
14. Ability to convince the panel of the ideas being presented					1
15. Ability to discuss / revise program modules as required by the panel members					



Jury's Signature over Printed Name Date:

Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY Bacolor, Pampanga



Capstone Instructor Signature over Printed Name
Date:

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IV. SOFTWARE (90% completed)	5	4	3	2	1
16. Executability of the software					
17. Ease of use / user-friendliness					
18. Ability to ensure data accuracy and validity					
 Effectiveness and efficiency of the software in meeting necessary user requirements and objectives of the study 					
20. Completeness of software features / components / modules to meet user requirements and objectives of the study		0-1			
21. Completeness of software features / components / modules consistent with existing systems similar to the study					
22. Correctness and completeness of appropriate theories in the development of the software					
23. Consistency of design and implementation with the principles of software development					
24. Absence of errors	\vdash	$\overline{}$			
25.Result of the study					
AVERAGE RATING (TOTAL SCORE/25)					_
#USE C 75 FE 19 USE POOT 1 - 10 - 11					

Appendix J Oral Defense Evaluation Form – Final Oral Defense



Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY

Bacolor, Pampanga





Form'

ORAL DEFENSE EVALUATION FORM FINAL ORAL DEFENSE

	Semeste	er A.Y	
Title		1000012010	
<u>. </u>			
Capstone Group Me	ember's Name	ME	

Instructions to the Evaluator

- Place a check mark at the appropriate box given the following evaluation scores.
- ✓ Always affix your signature on the space provided below the form.
- No affixed signature shall invalidate the scores.
- Please use the recommendation form for your suggestions and recommendations.

I.DOCUMENT	5	4	3	2	1
 Correctness of the statement of the research problem, objectives, review of related studies, and theoretical framework 					
Clarity of defined requirements			8		
 Completeness of analysis discussion and consistency with design discussion (document content and organization) 					
 Correctness of design and implementation issues with respect to the theories used in the study 					
Presence of citations for non- original material and sufficiency of the list of references used					
II.METHODOLOGY	15	4	3	2	1
6. Definition and application of the software development methodology		-			
7. Appropriateness of research, data gathering, and analysis tools utilized					
Appropriateness of the chosen methodology					
Adequacy of data gathered for the study					
 Adequacy, completeness, and effectiveness of diagrams graphs, charts, tables, and notations used 					
III. PRESENTATION	15	4	3	2	1
11. Clarity and organization of presentation delivery					
12. Adequacy of visual aids and other tools used for the presentation					
13. Ability to answer questions analytically and convincingly					1
14. Ability to convince the panel of the ideas being presented	T				
15. Ability to discuss / revise program modules as required by the panel members				1	9



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Bacolor, Pampanga LUBAO EXTENSION CAMPUS

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IV. SOFTWARE (100% completed)	5	4	3	2	1
16. Executability of the software		-			
17. Ease of use / user-friendliness					1
18. Ability to ensure data accuracy and validity					
 Effectiveness and efficiency of the software in meeting necessary user requirements and objectives of the study 					
20. Completeness of software features / components / modules to meet user requirements and objectives of the study					
21. Completeness of software features / components / modules consistent with existing systems similar to the study					
22. Correctness and completeness of appropriate theories in the development of the software					
23. Consistency of design and implementation with the principles of software development					
24. Absence of errors					
25.Result of the study	10				-
AVERAGE RATING (TOTAL SCORE/25)	Т				_
	_				
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Jury's Signature over Printed Name Capstone Instructor Signature over Printed Name Date:	nseq.	ceatt	ie		
Date.					

Appendix K **Capstone Project Evaluation and Recommendation Form**



Republic of the Philippines DON HONORIO VENTURA STATE UNIVERSITY

Bacolor, Pampanga

LUBAO EXTENSION CAMPUS COLLEGE OF COMPUTING STUDIES Bachelor of Science in Information Technology



Form 10

	CAPSTONE PROJE	CT EVALUATION	AND RECOM	IMENDATION	FORM
		Semester A.Y			
	[] Title Defense	[] Mock - C	oral Defense	[]Final C	Oral Defense
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O	· Crasin Mancharda Noma				
Capsion	e Group Member's Name				
	endation:	11 - 21 - 21 - 21 - 21 - 21 - 21 - 21 -	2000		00270230
[]	Accepted [] Acce	epted with Revis	ions []Re	defense	[] Failed
Comme	ents/ Suggestions/Recom	mendations for	Comments/ S	uggestions/R	ecommendations fo
	Document/Manuscr	ipt		Software/Sy	stem
				1	
	Member Signature	Chairman	Signature	Men	mber Signature
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Appendix L Online Oral Examination Request Form



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Bacolor, Pampanga

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Form 11

[] Title Defense	[] Mock - Oral Defense	[] Final Oral Defense
itle of the Proposal		
Name of the Proponents	Email Address	Contacts Numbe
Capstone Committee Name	Email Address	Contact Number
Online Platform to be used		
		166-

Appendix M General Formatting of Content

