

Revision of the Agricultural Education and Communication Department Senior Project Manual

A Senior Project

presented to

the Faculty of the Agricultural Education and Communication Department

California Polytechnic State University, San Luis Obispo

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science

by

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Abstract

The purpose of this project was to develop an up-to-date senior project manual for students of the Agricultural Education and Communication Department at California Polytechnic State University, San Luis Obispo. The previous manual was revised to include the most current information regarding the requirements of the senior project in the department, as most of the information had become outdated and no longer reflected the expectations of the department. The new design and format was created specifically to assist students in writing their senior project manuscript as well as in properly presenting their project within the manuscript. As a result of the revision of the manual, the quality and uniformity of senior projects submitted to the department is expected to improve significantly.

Acknowledgements

Dr. Robert Flores played a significant role in the successful revision of the Agricultural Education and Communication Senior Project Manual. I appreciate Dr. Flores' willingness to trust me with the completion of this project as well as the constant guidance he provided throughout the process of revising the manual. I also want to thank Dr. Bill Kellogg, Dr. Scott Vernon and Katherine O'Clair for their assistance in contributing to the revision process.

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Chapter One

Introduction

Universities across the country incorporate capstone courses into their undergraduate curriculum. The capstone course is an opportunity for students to apply their classroom learning by conducting research projects, completing internships, or participating in some other career-related experience. One of the undergraduate graduation requirements for California Polytechnic State University, San Luis Obispo, is to complete a capstone experience, which is referred to as the senior project. The process of completing the senior project in the Agricultural Education and Communication Department consists of three courses, AGED 460, AGED 461, and AGED 462. In the first course, AGED 460, a hard copy of The Senior Project Manual is given to every student to assist them in formatting and writing their senior project.

Statement of the Problem

The information presented in The Senior Project Manual has become outdated and does not accurately describe the current requirements of the senior project for the Agricultural Education and Communication Department. Part of the confusion is due to the fact that the expectations of the senior project have changed. In addition, faculty have different ideas about the senior project formatting requirements, which causes inconsistent formatting in the projects submitted to the department. To decrease formatting problems and confusion concerning the required subject matter and expectations for the senior project, a new manual needs to be created.

Importance of the Project

Students in the Agricultural Education and Communication Department need to finish this graduation requirement in the span of three quarters. However, they lack clear direction on how to proceed with the senior project after completion of AGED 460. Creating a new senior project manual will give students the direction they need to properly complete this graduation requirement because the manual will clearly outline all of the information required to be in the senior project. In addition to student's lack of direction, the faculty have different ideas about formatting requirements for the senior project, which leads to inconsistency in the projects submitted. Including a document in the new senior project manual that establishes standardized formatting requirements will resolve the inconsistency in the senior projects submitted to the department. It will increase the quality and uniformity of senior projects submitted and will also allow faculty to better advise students about the content, rather than the formatting, of their project. Developing a new senior project manual will not only benefit Agricultural Education and Communication students, but the department as a whole.

Purpose of the Project

The purpose of this project is to develop an up-to-date senior project manual for students completing undergraduate graduation requirements in the Agricultural Education and Communication Department at California Polytechnic State University, San Luis Obispo. This manual is intended for students majoring in Agricultural Science and Agricultural Communication.

Objectives of the Project

The Objectives of this project are as follows:

- Redesign the format of the senior project manual.
- Detail expectations and minimum requirements of each chapter of the senior project.
- Clearly delineate formatting requirements of the senior project.
- Develop a document summarizing the formatting guidelines of the senior project intended for faculty use.
- Create the senior project manual in booklet form for ease in duplication and/or electronic distribution.

Definition of Important Terms

- **Agricultural Communication Degree:** The BS Agricultural Communication program prepares students to become professional communicators in the agriculture industry and related fields. Graduates of the program are effective oral and written communicators with an applied knowledge of emerging new media. All students within the major take a common series of courses (Cal Poly Catalog, 2011-2013).
- **Agricultural Science Degree:** The BS Agricultural Science program offers a choice of one of six concentrations plus approved electives that may be selected from one or two career pathways: preparation of future agriculture teachers for the public secondary schools of California or professional preparation for broad-based agricultural occupations. The six concentrations are Agricultural Engineering Technology, Agricultural Supplies and Services, Animal Science, Crop and Soil Science, Forestry and Natural Resources, and Ornamental Horticulture (Cal Poly Catalog, 2011-2013).

- **Senior Project:** The senior project is a capstone experience required for all Cal Poly students receiving a baccalaureate degree. It integrates theory and application from across the student's undergraduate educational experiences (Cal Poly Catalog, 2011-2013).
- **Senior Project Manual:** A manual distributed to students in the Agricultural Education and Communication Department, which outlines the information that needs to be included in the senior project to fulfill the graduation requirement for their undergraduate degree.

Summary

The senior project is a wonderful opportunity for students to get first-hand career experience and show their ability to contribute to their future professions. However, frustration and misunderstanding of the senior project formatting and content requirements can hinder students from receiving the true benefits of completing a senior project, which is to “integrate theory and application” from their undergraduate studies (Cal Poly Catalog, 2011-2013). Creating an updated senior project manual that clearly explains the requirements of the senior project will improve the quality of senior projects submitted, as well as improve the experience the students and faculty have with this graduation requirement.

Chapter Two

The Literature Review

Capstone Experiences

Capstone experiences were created to be a culminating application of the knowledge learned during undergraduate coursework. Its purpose is to connect theory with application by allowing undergraduate students to participate in a first-hand career experience. Sandra Kerka explains in her application brief, “Capstone Experiences in Career and Technical Education”, that jobs require more than technical expertise but also nontechnical skills including leadership, teamwork, problem solving, decision-making, critical thinking, interpersonal management, and information management (2001). Capstone experiences are opportunities to teach undergraduates these skills that cannot be learned in the classroom but are necessary in the workplace. Studies show that students who participate in capstone courses require less on the job training, develop human relation and critical thinking skills, have the opportunity to reevaluate their career path, and see their future profession from a holistic perspective (Kerka, 2001). Participating in the capstone experience gives undergraduate students a realistic view of their future career, which better prepares students to be valued and skilled members of the workforce.

The Capstone Experience for Cal Poly: Senior Project

To graduate from California Polytechnic State University, San Luis Obispo, every undergraduate is required to complete a capstone experience known as the senior project. According to the Cal Poly Catalog, the definition of a senior project is “ a capstone experience

required for all Cal Poly students receiving a baccalaureate degree. It integrates theory and application from across the student's undergraduate educational experiences"(2011-2013). The catalog also explains that the senior project can consist of one or more of the following: a design or construction experience, an experiment, a self-guided study or research project, a presentation, a report based on an internship, co-op, or service learning experience, or a public portfolio display or performance. The nature or form of the senior project is at the discretion of each respective department or program and is carried out under faculty supervision.

The University's expected outcomes of the senior project are that each student be able to reduce a topic to specific points of analysis; organize the points of analysis into a logical sequence; apply acquired competencies to the successful completion of a project; obtain, evaluate, synthesize, and apply project-related information; develop and follow a project plan; estimate hours of labor and/or cost of materials necessary to complete a project; organize, illustrate and write clear and concise project documentation; and accept supervision when needed (Cal Poly Catalog, 2011-2013).

The requirements of senior project are also outlined in the Cal Poly Catalog. Students must have at least one senior project unit in their undergraduate coursework and not exceed six units. A thirty-hour requirement of work should be met to receive credit for each senior project unit but students are discouraged from embarking on projects that will require an excessive amount of their time. Senior project requirements within each department must be the same but each student at Cal Poly will have a unique curricula determined by their major. The catalog also states that the number of students working on a group senior project should not have so many participants that it limits the individual experience or responsibility and initiative. Lastly,

students have financial responsibility for funding their senior project and are also responsible for meeting the university's intellectual properties policy (Cal Poly Catalog, 2011-2013).

Senior Projects in the College of Agriculture, Food, and Environmental Sciences

As specified in the previous section, it is up to the discretion of each department at Cal Poly to determine the specific requirements of the senior project. Below are the requirements of the two of the departments in the College of Agriculture, Food, and Environmental Sciences.

Recreation, Parks, and Tourism Administration Department

In the Recreation, Parks and Tourism Administration Department, students are required to take two courses, RPTA 460 and 461, to complete their senior project. The course descriptions for RPTA 460 and 461 are outlined below:

RPTA 460 Research in Recreation, Parks and Tourism (4). Research design, literature review, questionnaire and interview schedule construction, sampling methods, data array and analysis, and computer applications. Selection of senior project topic and proposal development (Cal Poly Catalog, 2011-2013).

RPTA 461 Senior Project (3). Completion, under faculty supervision, of an investigative project typical of problems that graduates must solve in their fields of employment.

Required minimum of 90 hours. Analytical, formal report is required. Prerequisites: Senior standing and completion of RPTA 460 with a C- or better or consent of the instructor (Cal Poly Catalog, 2011-2013).

The first, RPTA 460, is focused on the research associated with the senior project. Students are required to finish the first two chapters of their senior project during this course. The second course, RPTA 461, is project based and is the actual "Learn By Doing" portion of

the senior project experience. In regards to assistance in formatting and writing the senior project, students are required to purchase *The Literature Review* by Lawrence A. Machi and Brenda T. McEvoy as well as *A Writer's Reference* by Diane Hacker (Recreation, Parks, and Tourism Administration, 2012). Students are also given an electronic copy of the department's "Senior Project Policies and Procedures Manual" as well as a "Senior Project Template". Both of these documents clearly outline the expectation of the formal documentation of the senior project.

Agricultural Education and Communication Department

In the Agricultural Education and Communication Department, students are required to take three courses to fulfill their senior project requirement. The courses are AGED 460, AGED 461, and AGED 462. The senior project is split into three sections; chapters one and two are completed in AGED 460, chapter three is completed in AGED 461, and chapter 4 and 5 are completed in AGED 462. While AGED 460 is treated as a normal lecture course, AGED 461 and 462 are set up as individual meeting times with a specified faculty member who will oversee the student for the duration of their senior project.

Students are given a hard copy of the "Senior Project Manual" in the AGED 460 class. The manual is formatted as a mock senior project. The information included in the manual needs to be updated as the expectations and formatting standards described in it are no longer applicable.

The Components of the Agricultural Education and Communication Senior Project

The senior project for the Agricultural Education and Communication Department is composed of five chapters. The first chapter gives an introduction of the topic that will be

studied and discussed in the senior project and a problem associated with the topic that needs further research. Chapter two is a literature review of the topic, which qualifies the student's expertise of the topic. Chapter three is a step-by-step explanation of how the student will solve the problem they have found associated to their topic. Chapter four is presentation of the completed senior project. Lastly, in chapter five students will make conclusions about the outcome of their senior project.

The Literature Review

Chapter two of the senior project is the most intensive chapter of the senior project. The chapter gives credibility to the student by demonstrating their knowledge and understanding of the topic they have chosen to research. According to "The Literature Review" by Lawrence A. Machi and Brenda T. McEvoy, "A literature review is a written document that presents a logically argued case founded on a comprehensive understanding of the current state of knowledge about a topic of study. This case establishes a convincing thesis to answer the study's question"(2009). For the purposes of completing the senior project requirement for the Agricultural Education and Communication Department, the literature review is the second chapter of the senior project, which is used to demonstrate knowledge and expertise on the topic students have chosen to research in your senior project.

There are two types of literature review, a basic literature review and an advanced literature review. The basic literature review summarizes and evaluates existing knowledge about a particular topic. The purpose is to state a position on the state of that knowledge. The advanced literature review addresses the state of knowledge on a topic and then identifies an issue to study that needs further research development (Machi and McEvoy, 2009).

Machi and McEvoy outline six steps of a literature in their book. The steps are to select a topic, search the literature, develop an argument, survey the literature, critique the literature, and last write the review. The main goal in selecting a suitable topic is to state it as a well-define question that will allow you to find specific and concise research to support the topic chosen. Searching literature allows the researcher to find the strongest evidence to support their topic. After finding strong evidence through the literature search, the claims and thoughts about the research topic need to be formulated into a clear, sound argument. Once the argument is created, the researcher needs to analyze the evidence gathered in the literature search as a means of forming an argument about the current knowledge about their topic. In the literature critique, the researcher interprets the knowledge that is recognized about their topic and its validity to their research. The last step is to use all the information gathered in the first five steps and write the literature review (Machi and McEvoy, 2009).

Summary

The capstone experience for California Polytechnic State University, San Luis Obispo is known as the senior project and is used to give undergraduate students an opportunity to apply their classroom learning in a pre-professional environment, as well as learn interpersonal skills that are essential in the workplace. Students who participate in these types of pre-professional experiences are proven to excel more quickly in their fields as well as have a better understanding of their industry than other employees. In regards to fulfillment of this graduation requirement, each department at Cal Poly has its own discretion as to how their undergraduate students have to complete the senior project, but must meet the minimum requirements of the University. For the Agricultural Education and Communication Department, students take a

three course series to complete their senior project and are given a senior project manual to assist them in formatting and writing their senior project. The information presented in the senior project manual has become inapplicable for completion of this graduation requirement in the Agricultural Education and Communication Department. Therefore, the manual needs to be updated to provide clarification of the expectations as well as formatting and content requirements for the senior project.

Chapter Three

Methods

In order to create an up-to-date senior project manual that reflects the changes in expectations and formatting of the senior project in the Agricultural Education and Communication Department, the first step is to consult faculty and create an outline of the information that should be presented in the manual. Faculty should also be consulted concerning possible senior project ideas in Agricultural Education and Communication to present in the manual. Lastly, faculty should be consulted about the formatting requirements and procedures that are required to submit senior projects to the university. Following faculty consultation, the author will find outside resources that best describe the process of formatting and submitting the senior project. The resources should focus on the American Psychological Association (APA) formatting guidelines, the exact format and content requirements of the senior project, and steps of senior project submission.

It is important when creating the manual to present the information in a simplistic format with as much detailed information as possible to guide students through the process of completing their senior project. An introductory section should be included that addresses the logistical information concerning the completion of the senior project, including what chapters must be completed in each of the three senior project courses and the selection of the senior project advisor. In addition, there should be five different sections defining the focus of each of the five chapters of the senior project as well as specific information to need to be covered in each specific chapter. Lastly, there should be appendices at the end of the manual that include

APA formatting guidelines, other formatting guidelines, example senior project chapters, and senior project submission instructions.

Faculty Consultation

Three professors were consulted concerning the creation of a new senior project manual. The first professor, Dr. Robert Flores teaches the AGED 460 course and served as the faculty advisor for the senior project. He explained how the expectations and formatting have changed for the senior project as well as how the senior project should now be formatted. He also provided resources to aid in understanding the process of senior project submission and gave general assistance in the formation of the manual.

Dr. William Kellogg, the department head of the Agricultural Education and Communication Department, provided a list of criterion that Agricultural Education students should consider when choosing the topic of their senior project as well as a list of possible senior project suggestions for students pursuing a career in Agricultural Education.

Dr. J. Scott Vernon, the main faculty advisor for students studying Agricultural Communication, also provided a list of criterion Agricultural Communication students should consider when choosing the topic of the senior project as well as a list of possible senior project suggestions for students pursuing a career in Agricultural Communication.

Identifying Available Resources

The author used both print and online resources in updating the senior project manual. The print resources used were the previous department manual as well as the book, *The Literature Review* by Machi and McEvoy. The previous department manual was consulted as a

reference for general senior project requirements that are not specific to a research-based project. *The Literature Review*, was used to obtain a definition of a basic literature review to place in the updated manual. The online resources used were the Purdue Online Writing Lab, the APA formatting website, the Agricultural Education and Communication Digital Commons. The Purdue Online Writing Lab, also known as OWL, is a useful resource that describes the requirements for APA formatting standards. A screenshot of the website was placed in the appendix of the manual along with directions for finding information on the site. The APA formatting website also explains all relevant information regarding proper APA formatting. Screenshots of the APA website were included in the updated manual with instructions for navigating the site. Lastly, the Agricultural Education and Communication Digital Commons were used to find exceptional examples of the senior project manuscript from students in the department to use in the updated manual. All of these resources bring clarity and simplicity in understanding to the updated senior project manual.

Developing the Manual

After consulting the faculty of the Agricultural Education and Communication Department as well as researching and choosing the most appropriate resources for students to use in the completion of their senior project, the author began to develop the manual. It was important to include color in the manual as well as create a very user-friendly manual. In order to create a more user-friendly manual, the author hyperlinked the entire table of contents to correlate with each section of the manual as well as hyperlinked important webpages for students use. To reflect the updated requirements of senior projects for the Agricultural Education and Communication Department, three different types of senior projects were outlined and explained

in the Chapter Four section of the manual rather than focusing solely on research-based senior projects. In addition, numerous appendices were included that explained content that some students may be required to include in their projects and may need understanding to format and create.

Continuous Revision Process

The author met regularly with Flores to ensure that the correct information and requirements were being conveyed in the senior project manual. The meetings lasted from 30 minutes to 1 hour. Constant revision of grammar, spelling, and content is essential to presenting the most useful resource to students in the department.

Summary

It is essential in revising a senior project manual to consult faculty regarding the current requirements, utilize outside resources to explain how to properly format and compose the senior project, as well as create a manual that is user-friendly and contains up-to-date, correct and clear information. According to university standards, the faculty of each department dictates the requirements of the senior project for their students. Therefore, consulting faculty in the revision of the senior project manual is essential to providing the correct information to students. In addition, finding appropriate outside resources to present in the manual will bring ease and clarity to students as they complete their project without the author having to create all the information to present. Lastly, the development and sequence of the manual needs to establish the manual as a resource to students in completing the senior project, not a hindrance to their progress. All the steps taken to revise the senior project manual serve to increase the quality as

well as the uniformity of the senior projects submitted to the Agricultural Education and Communication Department.

Chapter Four

Results and Discussion

In the following pages, you will find the revised version of the Agricultural Education and Communication Senior Project Manual. The updated manual was created to be both user-friendly as well as eye-catching. It will be useful for both the faculty and students of the Agricultural Education and Communication Department, but is written specifically to assist students in writing their senior project manuscript as well as properly presenting their senior project in the manuscript. The manual is presented as screenshots within the pages of the manuscript. In order to create a more user-friendly manual, the author hyperlinked the entire Table of Contents to correlate with each section of the manual as well as hyperlinked important webpages for student use. To reflect the updated requirements of senior projects for the Agricultural Education and Communication Department, three different types of senior projects were outlined and explained in the Chapter Four section of the manual rather than focusing solely on research-based senior projects. In addition, numerous appendices were included that explained content that some students may be required to include in their projects and may need understanding to format and create.

The Agricultural Education and Communication Department Senior Project Manual

By Cassie Burrows
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Senior Project Overview

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Introduction

The senior project is a capstone experience that provides undergraduates in the Agricultural Education and Communication Department a tangible opportunity to apply and showcase what they have learned through their undergraduate experience at Cal Poly. This is the last major project you will undertake as an undergraduate and it is also one of the requirements students in the department must fulfill to graduate. Take this graduation requirement seriously and plan to give yourself about 12-18 months to complete it.

University Expected Outcomes of the Senior Project

Each department at Cal Poly has freedom in creating the requirements they would like students to fulfill for the senior project. However through the completion of the senior project, students are expected to have the ability to:

- Reduce a topic to specific points of analysis
- Organize the points of analysis into a logical sequences
- Apply acquired competencies to the successful completion of a project
- Obtain, evaluate, synthesize, and apply project-related information
- Develop and follow a projected plan
- Estimate hours of labor and/or cost of materials necessary to complete a project
- Organize, illustrate, and write clear and concise project documentation
- Accept supervision when needed

Departmental Requirements of the Senior Project

Whether you are majoring in Agricultural Communication or Agricultural Science, you are required to take three courses to complete your senior project. The three courses are AGED 460, AGED/AGC 461, and AGED/AGC 462. Some students choose to take them during three separate quarters and others choose to take AGED/AGC 461 and 462 at the same time.

Individualized vs. Team Projects

You do have the option to complete your senior project with other students. Some students choose to do this because the scope of certain projects is too large for one person to complete alone. However, choosing to complete the senior project with multiple students adds a degree of difficulty in submitting a well-written, cohesive senior project. Please note that team projects entail a lot of coordination and effort in the distribution of project workload, which is not a concern when completing your senior project alone. If you decide that you would like to complete your senior project with a partner (or partners), be sure to consult with your senior project advisor to receive their approval.

Required Courses

AGED 460: Research Methodology in Agricultural Education & Communication

For Agricultural Science students, AGED 460 is the only course for senior project that you will attend weekly as a standard lecture course. Both Agricultural Science and Agricultural Communications students take this course. By the end of the quarter, you will be expected to have selected your senior project topic and also completed Chapter 1 and Chapter 2.

AGED/AGC 461: Senior Project

For AGED/AGC 461, you will choose your senior project advisor and enroll in his/her specific section of the course. You are expected to complete Chapter 3 of the senior project during this course along with developing an outline for Chapter 4. It is critical to schedule a weekly meeting with your advisor during the first week of the quarter to ensure that you are making progress and getting constructive feedback on your senior project. Attending your weekly meeting with your advisor is a component of fulfilling the expectations for this course.

AGED/AGC 462: Senior Project

This is the final course for completing your senior project. You must complete Chapter 4 and 5 of your senior project as well as submit the final copy to the Cal Poly Library. This course must be completed for you to graduate from Cal Poly.

Note: As mentioned previously, you may take AGED/AGC 461 and 462 the same quarter if needed. However if you choose to do so, be certain that you have the appropriate time to dedicate to the workload these two courses entail.

Selecting Your Topic

This step is one of the hardest, either because students have too many ideas and cannot choose one of them, or have no ideas to consider. Below are a few guidelines to assist you when choosing your senior project topic:

1. **Students are encouraged to identify projects that can validate their expertise in some aspect of agriculture. Your senior project is meant to be a piece of work that will be showcased in your portfolio.** For instance if you are a horticulture concentration, think about focusing your project on improving some aspect of the horticulture industry.
2. Realize that the senior project is comprised of three, 1-unit courses. You are expected to complete 30 hours of work per unit, meaning that the total amount of time it should take you to complete your senior project is 90 hours. If your idea seems like it will take more than 90 hours of effort to complete, discuss its feasibility with your senior project advisor. Remember this is a senior project, not a master's thesis!
3. **For Agricultural Science students:** Students graduating with an Agricultural Science degree typically work as agricultural educators or in occupations that require a general knowledge of agriculture including production and service industries. Some possible project ideas include:
 - Developing an instructional video
 - Writing curriculum or lesson plans
 - Creating Agriculture in the Classroom lesson plans
 - Planning and/or executing an educational event

- Ag. Venture Day, Field Day, Wine Festival, etc.
 - Implementing a project in a school
 - School Garden
4. **For Agricultural Communication students:** The Agricultural Communication coursework is focused on enabling you to convey information about the importance of agriculture through many different forms of media. Students graduating with an Agricultural Science degree generally go into careers in journalism, writing, broadcasting, event planning, and event planning. Some possible project ideas are:
- Developing a website
 - Producing newsletters or magazines
 - Performing a Media Analysis (research-based project)
 - Example: Examining how salmonella is presented in local media
 - Creating a public relations campaign
 - Implementing a public relations campaign
 - Planning and/or implementing an agricultural event
5. Your senior project topic can also be something that has surfaced from an experience like an internship or job experience. For example, developing a procedural manual for a company you worked/interned for or conducting research about some aspect of the business.

Note: All senior projects could be research-oriented, which includes experimental design, survey research and project-based research.

Possible Ideas for Senior Project

In the lines below, brainstorm some of your ideas for senior project. Don't hesitate to write anything down. No idea is a bad idea to consider!

Research Plan for Chapter Two

Once you have chosen a topic for your senior project, the next step is to complete a research plan. This is one of the assignments you will complete in AGED 460. If you put the time and effort into your research plan, writing Chapter Two of your senior project will be much easier. For your research plan, you will need to:

1. Define the problem related to your senior project topic

- As explained later in the manual, the purpose of completing your senior project is to solve a “problem”. Knowing what problem you want to “solve” will focus your search of the relevant information related to your topic.

2. Explain what the purpose or general idea of your project is

- This does not need to be in-depth or “set in stone”. You may find as you do research that your ideas about your project become more concrete and specific than when you started. Just give a few sentence summary of what you are thinking and planning at this stage in the process.

3. List keywords or phrases that will be useful in searching for information on your topic

- It would be wise to consult your senior project advisor or the college librarian in developing this list to save time and energy.
- If you have the ability to contact a recognized expert on your topic, they would also be a helpful resource to utilize.
 - Example: Employer who wants you to create a manual for some aspect of the business

4. Find at least three articles you can reference for your senior project topic

- While you are only required to find three sources, it is recommended that you find as many as possible for this assignment. The more information you have for your advisor to review, the more feedback you will receive in moving onto writing Chapter 2.
- You need to reference the articles using **COMPLETE** citations in APA formatting style (see [Appendix I](#)).
- Be sure to search for and use the most current information available about your topic.

Once again, it is strongly encouraged that you dedicate time to finding as much quality and credible research as possible. If you find all your references while conducting your research plan, the writing process for Chapter Two will be much less intensive and time consuming.

Selecting Your Senior Project Advisor

When deciding which professor you would like to work with for AGED/AGC 461 and 462, make sure the professor you select is someone you feel you can work well with for the next several quarters. You are expected to maintain a close working relationship with your senior project advisor and are also expected to meet weekly with your advisor. Your senior project advisor must be a professor or a teacher in residence in the Agriculture Education and Communication Department.

*The Senior Project manuscript refers to the content that you will write in chapters 1-5, **NOT** the actual senior project itself. Note that if you are creating a manual or some other type of written document for your senior project, it does not have to meet the following formatting standards.*

Formatting The Senior Project Manuscript

Formatting The Senior Project Manuscript

In formatting your senior project manuscript, you must follow the guidelines listed below:

- Use Arial, Times New Roman, or Calibri font
 - These are the preferred fonts, if there is another font that you would like to use, contact your senior project advisor to make sure it is an acceptable font
- Use Font Size 11 or 12 throughout project
 - You can use underlining, **bolding**, *italics*, or CAPITALIZATION to emphasize words, but **DO NOT** vary the size of the font in your project
- Double space the entire project
 - Exception: Table of Contents
- Use APA Style formatting for all citations
 - See [Appendix I](#)

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- To find out what APA Style is, click on the following hyperlink:
 - <http://www.apastyle.org/learn/faqs/what-is-apa-style.aspx>

- To find out why we need to use APA style, click on the following hyperlink:
 - <http://www.apastyle.org/learn/faqs/why-apastyle-needed.aspx>
- Page Numbers
 - No page number should appear on the Title Page, but it is considered page 1 of your manuscript.
 - The Abstract, Acknowledgements Page, Table of Contents, List of Tables, and List of Figures pages need to be numbered in small case Roman numerals (i, ii, iii, etc.)
 - The remainder of the manuscript contents needs to be numbered consecutively in Arabic numbers (1,2,3, etc.)
- Each chapter must have an introductory paragraph explaining the chapter and its contents
 - You do **NOT** need to write the subheading “Introduction” for these paragraphs
- Write in the third person, past tense
 - **NEVER** use the words “I” or “my” in your manuscript
 - You may refer to yourself as “the author” or “the researcher”

*Chapter 1 is meant to give an overview of
your senior project.*

Chapter 1 The Introduction

Chapter 1: The Introduction

Chapter One should include:

- ☐ A short introductory paragraph presenting your senior project topic
- ☐ Statement of the Problem
- ☐ Importance of the Project
- ☐ Purpose of the Project
- ☐ Objectives of the Project
- ☐ Definitions of Important Terms
- ☐ Hypothesis (not used in all senior projects, consult senior project advisor)
- ☐ Summary

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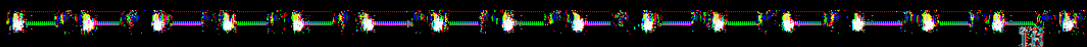
Introductory Paragraph

The introductory paragraph for Chapter One should provide a general background for the topic you have chosen and should include pertinent information related to your senior project. The length of this paragraph will be dependent on your topic. Make sure to consult your senior project advisor if you are unsure about the information to be included. Below is an example of an introductory paragraph for a senior project topic that entails updating the College of Agriculture, Food and Environmental Sciences Enterprise Manual to assist agricultural education students:

Chapter One

Introduction

To become an Agricultural Educator in the State of California, credential candidates must complete 3000 hours of occupational experience. This requirement is reasonable considering that the ability to teach the majority of agricultural concepts is derived from first hand experience. The College of Agriculture, Food and Environmental Sciences (CAFES) at California Polytechnic State University, San Luis Obispo offers numerous enterprise projects in an effort to give students the opportunity to fulfill their occupational hours as well as receive the first hand experiences to make them exceptional agricultural educators. However, many agricultural education students do not know what enterprises are or what enterprises are offered through CAFES. Due to this lack of knowledge, many agricultural education students do not get the opportunity to become involved in enterprise projects, which is a wonderful way to gain occupational experience in working towards fulfilling their credential requirement.



Statement of the Problem

The purpose of completing your senior project is to solve a "problem". So in order for you to solve a "problem", there first has to be a "need". That "need" is what you have to explain in your statement of the problem. Continuing with our example above, if you believed that the enterprise manual for the College of Agriculture, Food and Environmental Sciences needs to be updated in order to better serve agricultural education students working to meet their 3000 hour requirement, your statement of the problem would read:

Statement of the Problem

A majority of the agricultural education students in CAFES are not informed about the wide range of enterprises that are offered in the areas of animal science, horticulture, crop science, and natural resource management or the 3000-hour requirement for credential candidates. To better involve students in enterprise projects at Cal Poly, students need to be better educated about faculty to contact, the amount of hours they can earn on a specific enterprise project, when the enterprise is offered, and what type of skills they will learn on the enterprise. Though an enterprise booklet currently exists, it needs to be updated with a current list of enterprises and reformatted to provide students with detailed information about getting involved with these educational learning experiences as well as an outline of how many hours they need to fulfill each year to reach the occupational experience requirement before they graduate.

In the Statement of the Problem, you first need to give background information relative to the problem you are presenting and then state the problem. In the example on the previous page, the first two sentences provide background of the problem and the last sentence states the problem. It is important for you to understand the problem being addressed in your senior project so you can clearly and concisely communicate its importance in Chapter One.

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Importance of the Project

The need for your senior project should be relevant to the agricultural industry. Therefore, you need to give evidence that supports your project's importance to improving the industry for the future. For our example, the Importance of the Project would read:

Importance of the Project

The importance of this project is to increase involvement of students in enterprise projects as a means of fulfilling their occupational experience hours. This project will benefit agricultural education students because they will understand from the time they enter Cal Poly how they can successfully fulfill a required part of their credentialing process. The Agricultural Education Department will also benefit because they will not have to put the time and effort into developing the updated enterprise manual but will still be able to distribute it and use it as an educational tool for their students.

As seen in the second and third sentence of the example above, it is clearly explained how both the students in agricultural education as well as the faculty will

benefit from the development of the manual. Including your Importance of the Project becomes to completely illustrate not only who will benefit from your project, but also how your project will benefit the agricultural industry.

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Purpose of the Project

The Purpose of the Project should indicate what the final product or outcome of your senior project will be. Continuing with our previous example, the Purpose of the Problem would read:

Purpose of the Project

The purpose of this project is to update the current enterprise booklet by reformatting it to include more detailed information about each enterprise offered as well as information about the 3000-hour credential requirement.

In this example, the enterprise booklet is the final product. Your final product or outcome may be a video, website, research, manual, etc. Be as explicit as possible in stating what viable outcome or product will result at the completion your senior project.

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Objectives of the Project

The objectives of your senior project are measurable benchmarks to determine if you are achieving the purpose you have indicated. For our example, the objectives would read:

Objectives of the Project

The objectives of this project are to update the current enterprise booklet by:

- Separating enterprises by concentration areas including Animal Science, Crop Science, Forestry and Natural Resources, and Ornamental Horticulture
- Stating specific skills student will gain and the amount of hours students can complete by participating in each particular enterprise
- Including when informational meetings are held for each enterprise project, if there is one
- Outlining how many hours students have to complete each year of their undergraduate study to fulfill the 3000-hour requirement
- Omitting any information that is no longer current or correct in the enterprise booklet
- Contacting faculty that are in charge of each enterprise and confirming the information included in the new enterprise manual
- Finishing the manual and publishing it for the 2012-2013 academic year for use in the College of Agriculture and Environmental Sciences

As you can see above, the best way to present your objectives is to itemize them into bulleted points. This makes your objectives clear, concise, and measurable for success or failure at the conclusion of your project.

Definitions of Important Terms

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In some projects, there will most likely be language and terminology that the reader won't understand regarding your senior project topic. This section of Chapter One is where you will define and explain what the terminology means in the context of your project. You are **NOT** giving the dictionary definitions of the terms but rather what the term means in relation to your senior project. You can also identify acronyms and abbreviations in the definition of important terms. Below is an example:

Definition of Important Terms

Career Technical Education- A program of study that involves a multiyear sequence of courses that integrates core academic knowledge with technical and occupational knowledge to provide students with a pathway to postsecondary education and careers (California Department of Education).

Enterprises- projects offered on the Cal Poly campus through the College of Agriculture, Food, and Environmental Sciences to give students practical, hands-on experience in production agriculture.

SB 187- A senate bill that states 15 program standards that have to be met in order for agricultural education programs in California to receive funds through the Agricultural Vocational Education Incentive Grant Program.

Also note that the definitions in the example are alphabetized; be sure that you do the same in your manuscript. In addition, often times when students are defining important terms they are relying on other sources for the definition. You need to make sure that you are correctly citing these sources in your references as shown above with the term "Career Technical Education".

Summary

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At the conclusion of Chapter One you should summarize what you have explained about your senior project. In this section, briefly reiterate the nature of the problem and how you plan to address it in your project. Indicate the purpose for doing the project and what the final outcome will be.

Summary

Enterprise projects are a wonderful opportunity for students to gain experience in production agriculture, especially for those who plan to pursue a career in Agricultural Education but do not come from an agricultural background. Adequate knowledge about their existence as well as the experience that can be gained through involvement in these projects is essential to increasing student participation. The enterprise manual is the perfect opportunity to provide this needed information to students, but must contain current and correct information so that it will prove to be useful to students.

In addition to increased involvement in enterprise projects, students will be working to complete their 3000-requirement for credentialing while pursuing their undergraduate studies. It is important that students understand how much time has to be dedicated to fulfilling this requirement as well as knowing the opportunities they have during their undergraduate studies to fulfill it. Updating the enterprise manual is an essential development to improve agricultural education students' knowledge about the agricultural industry and the occupational experience requirement involved in the credentialing process.

While you can write your summary however you like, it should reintroduce what you explained in your statement of the problem, importance of the project, and purpose of the project. The summary does not need to be long; two to three paragraphs should

be sufficient.

In Chapter 2, the goal is to establish yourself as an expert about your senior project topic.

Chapter 2 The Literature Review

Chapter 2: The Literature Review

In writing Chapter Two, you will further develop the outline of themes, topics, and sources you created in your Research Plan. As shown above, Chapter Two is entitled “The Literature Review” or “Review of Literature”. This title can be confusing if you do not know what a literature review is. For starters, “literature” does not just refer to books you read in your English class but rather any published information about a particular topic. For your senior project, you will be conducting a basic literature review. This simply means that you will be summarizing and evaluating the existing knowledge that is related and relevant to your senior project topic (Machi and McEvoy, 2009). The purpose of the literature review is to increase your knowledge about previous research that has been conducted about your senior project topic as well as bring credibility to your project. **It is important to note that you will not only need to summarize and evaluate the research, but also always *CONNECT* it to your senior project topic. Also, all the information included needs to come from reliable sources. Your goal is to find the most relevant information that will validate the purpose and importance of your senior project.**

Note: See [Appendix VIII](#) to see an example of Chapter Two. The digital commons is also

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a good place to look, consult your advisor for a good project to use as a reference.

Tips for Successful Research with Library Databases

The library at Cal Poly has great resources for finding relevant literature related to your senior project. The only trick is that you have to be able to use the resources correctly! In using databases, there are two keys to successful research: the right *words* and the right *tool* (or database). Finding the right word can be much harder than finding the right database because of the technical terminology that is often used in academic literature. Here are a few tips:

- When you search in a database and do not like the results you get from the keyword chosen, scroll through the articles listed and see if there is any technical terminology used that may give better results and use it as your keyword
- When you find a relevant article that you will use in your project in a database, look at the database-specific section (could be entitled descriptors, technical terms, or subjects) that lists keywords that are similar and click on them to find other useful articles

The screenshot displays the EBSCOhost search interface. At the top, there's a navigation bar with links like 'New Search', 'Indexes', 'Sign In', 'Folder', 'Preferences', and 'Language'. Below this, the search bar shows 'Searching: Agricola' and 'Choose Databases'. The search term 'agriculture teacher' is entered in the main search box. To the right of the search bar are buttons for 'Search', 'Clear', and a help icon. Below the search bar, there are three rows of 'AND' search boxes, each with a dropdown menu to 'Select a Field (optional)'. A red arrow points to the 'Descriptors' field in the detailed record section. The detailed record shows the title 'A comparison of first and fifth year agriculture teachers on personal teaching efficacy, general teaching efficacy and content efficacy [electronic resource].', the author 'Burris, Scott; Brashears, Todd; Frazee, Steve; McLaughlin, E. Katy; McCulloch, Abigail', the source 'Journal of agricultural education, 2010, v. 51, no. 1, p. 22-31. 51 1', and the descriptors 'teachers; educational methods; case studies; agricultural education'.

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Give yourself TIME...

For this chapter especially, you want to make sure you allot enough time to complete your research. This is a very time-intensive process as you need to find relevant literature, read the relevant literature, and then write a chapter of your senior project showing the literature's relevance to your topic. As mentioned earlier in the manual, the more time and effort you put into finding quality information about your senior project topic, the easier writing this chapter will be. Some tips for conducting your literature review are below:

- Start early!! Schedule a few, two or three hour windows of time to sit in the library and spend time researching relevant literature.
- Before you start researching, make sure you have a clear idea about what type of information you are seeking and stick to your plan. Write it down and keep it next to you while you are researching.
- While searching through articles and literature for your topic, it is easy to get lost in the sea of information. When you find an article, rate it on a scale of 1-3:

1= not relevant, will not use in project

2= unsure, may use in project

3=relevant, will use in project

Using this process will help you categorize and keep yourself focused in your research.

- There will most likely not be information specifically about your project, but you will be able to find applicable literature that relates to your topic.
- Attend the CAFES Senior Project Survival Workshop hosted by the college

librarian. In this workshop, she will explain a lot of useful information needed to be successful with library research. The date and location changes each quarter, be sure to ask your senior project advisor or email the librarian for detailed information.

- If you have exhausted all your resources and find that have hit a “dead end” with your research, go to the college librarian’s office hour or schedule a half hour appointment with her for some help. Do **NOT** go to the librarian and expect him/her to do your research for you; the college librarian is a resource not your research assistant. However if you are in need of help, he/she can help you brainstorm a list of useful phrases and keywords to search as well as databases that would be relevant for your project.
- You may find an article that will be useful in your project but is not available through the library because the library does not subscribed to the journal/ magazine that the article is published in or because you have to pay a fee to read the article. You can use this article through the library’s Interlibrary Loan Program. Go to <https://illiad.lib.calpoly.edu/cas/illiad.dll> for more information about this program.

Referencing Citations

As specified in the formatting guidelines, all citations need to be in APA format.

See [Appendix I](#) for more information and assistance in using APA style formatting.

- **Hint:** When conducting your literature review, take lined index cards with you to document each sources exact APA reference. It is easy and common for students to cite something in their paper and then forget where the information came from.

In Chapter 3, you will explain the step-by-step process it took to complete your senior project.

Chapter 3 Methods and Materials

Chapter 3: Methods and Materials

Chapter Three will most likely be the easiest chapter of your senior project to write because it is so straightforward. You simply describe what you did to complete your project, step by step. The main purpose of this chapter is to provide a framework for other students to follow if they decided to conduct a senior project similar to yours. Despite the simplicity of the requirements for Chapter Three, you need to keep detailed records of each step you take in the project to ensure that all steps in the process are included.

Chapter Three needs to begin with an introductory paragraph(s) that explain what steps need to be taken to complete senior project. Following the introductory paragraph(s), each step will need to be denoted by a separate heading and described in paragraph format. See the following page for an example of the correct and incorrect ways to format your headings for Chapter Three. Also, see [Appendix VIII](#) for an example of Chapter Three.

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Incorrect:(

Step 1

The author first contacted faculty of each department in the College of Agriculture, Food and Environmental Sciences to find out each enterprise offered to students.

Correct:)

CAFES Faculty Consultation

In order to find out all enterprises offered to students within the College of Agriculture, Food and Environmental Sciences, faculty from each department were contacted.

Similar to chapters one and two, Chapter Three also needs to have a concluding paragraph to close. Focus on connecting the steps explained in the chapter to the purpose of your project.

*In Chapter 4, you will introduce
your actual senior project and showcase it.*

Chapter 4 Results and Discussion

Chapter 4: Results and Discussion

Chapter Four is your time to present your finalized senior project. As with each chapter, you need to begin with an introductory paragraph that explains to the reader how your senior project will be presented. The way you describe and present your senior project is dependent on the type of project you choose. The following pages will explain how to present three different types of projects: a video/website senior project, a research-based senior project, and a magazine/manual senior project.

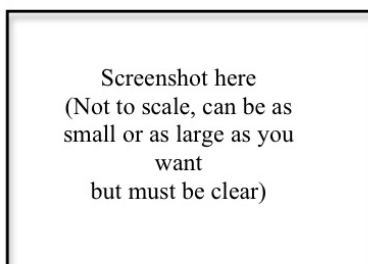
Note: Be sure to start a new page after you write your introductory paragraph(s) to begin the presentation of your senior project.

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Video/Website Senior Project

If you have chosen to do a video or website senior project, you will present it as numbered screenshots that have captions as well as written descriptions of what is depicted in each screenshot. For instance, if you created a website, you will need to take screen shots of each page of the website and explain what the contents of the page are. If you created a video, you will need to take screenshots of still frames from the video that correlate to the script you created for the video.

Example Layout for Video/Website Project



Website: Write explanation of contents of specific page shown in screenshot here.

OR

Video: Copy and paste portion of script that correlates to screenshot here.

Figure __: Write Caption Here

Providing a written explanation of each screenshot is critical to representing what is pictured. The screenshots are only one representation of what may be in a video clip or website and little meaning can be made by looking at them alone. Your written explanation should be as simple and concise as possible, one to two sentences will suffice.

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Research-Based Senior Project

If you have chosen to complete a research-based senior project, you will present your data through tables, graphs, charts, etc. and then give a written explanation of the findings that you gleaned from each set of data presented. Below you will find an example layout and an actual senior project example on the next page.

Example Layout for Research-Based Projects

Table __: Caption of what is being presented in table

Data presented
in table, graph, chart, etc. here
(not to scale, can be as large or small as
needed)

Note: Be sure to view [Appendix IV](#) to ensure that you are presenting the tables and/or figures in your senior project properly according to APA formatting.

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Table 2. Responses: Number of times hail cannon operated annually.

Cannon usage	Responses
1-2	0
3-5	4
6-9	1
10+	0

n=5

Table
Representing
Data

All of the farmers in the survey who utilize hail cannons during a storm concluded that they haven't received significant hail damage with the cannons being operational. Table 3 shows the results of the number of farmers who have had significant hail damage while utilizing hail cannons. Note that there could have been some hail damage, but nothing extreme enough to be labeled as significant.

Paragraph Explaining
Data Set

Magazine/Manual Senior Project

If you have chosen to create a magazine or a manual for your senior project, you will simply present the contents of the magazine/manual following the introduction to Chapter Four.

Note: You must make the contents of the magazine/manual smaller enough that it can be presented within the pages of the senior project (see next page).

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Chapter 5 is the final chapter of your senior project. In this chapter you will make conclusions about your project as well as offer any recommendations to improve the project for someone who chooses to complete a project similar to yours.

Chapter 5 Summary, Recommendations and Conclusions

Chapter 5: Summary, Recommendations, and Conclusions

Chapter Five does not need to be long but it must be complete. It needs to include a summary of your project as a whole, your recommendations for students completing a project similar to yours, as well as conclusions you made as you completed the project.

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Summary

In your summary, reintroduce your actual project and its purpose. Explain what the effects will be as your project is implemented or used as well as whom its implementation will affect and how. As you conclude your summary, express any ideas you believe should be taken into consideration with your projects use.

Recommendations

The recommendations that you offer in this chapter will be the lessons you learned while going through the senior project process. Ask yourself, "If I had to do this project over again, what would I do differently? What would I do the same? What could I have done better?" You can also share what other areas need to be studied as a continuation of what you have completed in your senior project. It is highly recommended that you itemize your recommendations in a bulleted list. To view an

exceptional example of a bulleted recommendations list, view the following senior project at: <http://digitalcommons.calpoly.edu/agedsp/13/>

Conclusions

The conclusions you make in Chapter Five need to be focused on the outcomes of your project. What positive/negative outcomes came of completing your project? Your conclusions are what you have to share as a result of completing your project. To see a good example of conclusions made about a senior project, see one of the Agricultural Communications student's senior project at: <http://digitalcommons.calpoly.edu/agedsp/17/>

The critical point of completing this chapter is to reflect on your senior project experience and be able to make accurate conclusions as well as offer useful recommendations to those who read it.

Note: See [Appendix X](#) for an example of Chapter Five.

YOU'RE DONE! Okay if you say so, let's make sure! Did you:

1. Proofread your entire project to see if there are grammatical or spelling errors?
2. Check [Appendix VI](#) to make sure you have everything required in your manuscript and project as well as if they are in the proper order?
3. Checked the formatting guidelines AGAIN to make sure that you are following the guidelines throughout your **ENTIRE** manuscript? (See [Formatting the Senior Project Manuscript](#))

If you have done all three things above, you are ready to submit a final hard copy of your project to your advisor. If they approve your project to be submitted to the Digital Commons in the library, see [Appendix VII](#) for instructions to properly submit your senior project.

Good Job! You FINALLY did it! Congratulations from the entire department on fulfilling this challenging, yet rewarding graduation requirement!

Appendix I: APA Formatting

Appendix I: APA Formatting

In the following pages you will find three recommended sources that will be particularly helpful in correctly using APA formatting in your senior project manuscript:

1. Diane Hacker's *A Pocket Style Manual* OR Diane Hacker and Nancy Sommer's *APA Version: A Pocket Style Manual*

- Either of these booklets will be helpful as they explain how to properly cite with APA style as well as offer a large number of examples of proper formatting. Diane Hacker's *A Pocket Style Manual* is a resource that includes not only APA formatting, but also MLA and *Chicago* formatting. The other manual, which is co-written by Nancy Sommer's focuses solely on APA style and formatting. Both also include three other sections that provide tips about clarity in your writing, tips for conducting research, as well as tips on proper grammar usage. It is inexpensive and will be a helpful resource to keep on hand beyond writing your senior project.



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2. The American Psychological Association (APA) Website

- This website was created and is maintained by the same association that governs APA Style. There are multiple different resources created that can be found on the website including manuscript formatting and creating a reference list. The URL for the website: <http://www.apastyle.org/>

The screenshot displays the APA Style website interface. At the top, the American Psychological Association logo and 'APA Style' branding are visible. A search bar and navigation links are present. The main content area is divided into three sections: 'Publication Manual', 'Learning APA Style', and 'APA Style Products'. Under 'Learning APA Style', there are three featured items: 'Learning APA Style' (highlighted with a red circle and an arrow pointing to the link 'The Basics of APA Style' with the text 'Click On: The Basics of APA Style'), 'Teaching APA Style', and 'Looking for answers?'. Below this, the 'The Basics of APA Style' tutorial page is shown, featuring a description of the tutorial and a link 'View the tutorial' (highlighted with a red circle and an arrow pointing to it with the text 'Click On: View this tutorial').

3. Purdue OWL Website

- This website was created and is maintained by the English Department at Purdue University. They have specific information for APA style and formatting, see below. The URL for the website is: <http://owl.english.purdue.edu/>

The screenshot shows the Purdue OWL website in a web browser. The browser's address bar displays <http://owl.english.purdue.edu/>. The website's main heading is "The Purdue Online Writing Lab (OWL)". Below this, there are several sections: "Suggested Resources" on the left, a central banner for "The Purdue Online Writing Lab" with a list of resources, and "Most Popular Resources" on the right. A red circle highlights the "Most Popular Resources" section in the top right, and a red arrow points from it to a larger, detailed view of the "Most Popular Resources" section at the bottom. In this detailed view, the "APA Formatting and Style Guide" is circled in red. Other resources listed include OWL Exercises, MLA 2009 Formatting and Style Guide, Avoiding Plagiarism, Writing the Basic Business Letter, and Developing a Résumé. The "Contact the Purdue OWL" section is also visible on the right.

Welcome to the Purdue University Online Writing Lab (OWL)

<http://owl.english.purdue.edu/>

The Purdue Online Writing Lab (OWL)

Suggested Resources

- Site Map
- Grades 7-12 Instructors and Students
- English as a Second Language
- Non-Purdue Instructors and Students
- Purdue Instructors and Students
- Professional Writers
- Parents
- Adult Basic Education (GED, ESL, Cover Letters, Résumés)

Featured OWL Resources

The Purdue Online Writing Lab

Welcome to the **Purdue OWL**. We offer over 200 free resources including:

- Writing and Teaching Writing
- Research
- Grammar and Mechanics
- Style Guides
- ESL (English as a Second Language)
- Job Search and Professional Writing

The Writing Lab at Purdue

Purdue University students, faculty, and staff at our West Lafayette. IN campus may access this area for information on

Most Popular Resources

- OWL Exercises
- APA Formatting and Style Guide
- MLA 2009 Formatting and Style Guide
- Avoiding Plagiarism
- Writing the Basic Business Letter
- Developing a Résumé

Contact the Purdue OWL

Appendix II: The Abstract

Appendix II: The Abstract

For all senior projects, an abstract must be written to summarize the contents of the senior project manuscript. Its purpose is to provide the reader an overview of the nature of the problem, the methods used to address the problem, and the outcomes of the project. The abstract will be placed after your title page and before your Table of Contents. Although the abstract is presented at the beginning of the project, it is strongly recommended that you write the information presented in your abstract at the conclusion of your project. It should be 300 words or less. Below is an example of an exceptional abstract:

Abstract

The purpose of this project was to create a safety program that was designed specifically for the milkers at the Cal Poly Dairy. It was designed as an orientation program for all new employees at the Dairy. By creating an orientation program that delivers a consistent message time after time, it is hoped that all student employees will be able to maintain a high level of safety while employed at the dairy. It includes an instructional video as well as a written safety test.

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Appendix III: Sample Table of Contents

Appendix III: Sample Table of Contents

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Appendix IV: Figures and Tables

Appendix IV: Figures and Tables

Purdue OWL also has a great web page explaining how to correctly use figures and tables in your senior project. Click on the following link to be taken to the webpage:

- For Tables: <http://owl.english.purdue.edu/owl/resource/560/19/>
- For Figures: <http://owl.english.purdue.edu/owl/resource/560/20/>

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Appendix V: Appendices

Appendix V: Appendices

The appendix of your senior project can be described as the “closet” because this is where you will include all the documents and materials that are not a part of your senior project manuscript. Some examples of items you could include in the appendix are diagrams, survey questionnaires, curriculum guides, or manuals. You do **NOT** have to have an appendix but if you are unsure if you need to include an appendix, consult your senior project advisor.

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Appendix VI: Sequence of the Manuscript

Appendix VI: Sequence of the Manuscript

Your senior project manuscript should adhere to the following sequence:

1. Title Page
2. Abstract
3. Acknowledgements Page (Optional)
4. Table of Contents
5. List of Tables
6. List of Figures
7. Chapter One
8. Chapter Two
9. Chapter Three
10. Chapter Four
11. Chapter Five
12. References
13. Appendices

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Appendix VII: Submitting The Final Draft

Appendix VII: Submitting the Final Draft

At the discretion of your senior project advisor, the Agricultural Education and Communication Department faculty chooses exceptional senior projects to be submitted to the library's Digital Commons. If your advisor feels that your project is worthy of being submitted to the Digital Commons, click on the following link for specific submission instructions: <http://lib.calpoly.edu/seniorprojects/guidelines.html>

In addition, to go specifically to the webpage containing forms and handouts needed to submit the senior project to the Digital Commons, click on the following link: <http://lib.calpoly.edu/seniorprojects/forms.html>

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Appendix VIII: Example Chapter Two

Appendix VIII: Example of Chapter Two

Chapter Two Review of Literature

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The purpose of this project is to develop a manual outlining the enterprises offered for Cal Poly Agricultural Science students who plan to pursue a career as a High School Agriculture Teacher. This chapter will provide the background information that supports the importance of pre-professional experience in the agricultural field for agriculture teachers in secondary education.

Agricultural Education

The Agricultural Education student has changed drastically from its beginnings in the early 19th century to today. When the Smith-Hughes Act of 1917 provided funding for vocational agricultural education, the makers of the act specified that the only students who could participate in agricultural classes were those who were already working in the industry or those who planned to return to the industry after completing their education (as cited in Talbert, Vaughn, Croom, & Lee, 2007, p.489). This served to segregate agricultural education students from those taking basic core classes in schools. However, now students are taking courses like Ag. Biology as well as Plant and Soil Science, which serve to integrate agricultural relevance into public school classrooms.

In the California Department of Education, Agricultural Education falls under Career

Technical Education. Also referred to as CTE, Career Technical Education is defined as, “A program of study that involves a multiyear sequence of courses that integrates core academic knowledge with technical and occupational knowledge to provide students with a pathway to postsecondary education and careers”(California Department of Education). The development of this educational program grew out of concern from California employers who took note of the “wide gaps between the skills that businesses value and the skills most graduates actually have”(as cited in O’Connell and Woodruff, 2008, p. 8). The CTE courses give students the opportunity to apply the theory taught in the classroom through hands-on experiences that allow them to use technical skills. These first hand experiences serve to deepen the understanding and learning process for students. Also, for students who do not wish to pursue postsecondary education, they still have marketable skills that will make them valuable employees in their community as they search for a career after high school graduation. The success of these programs lies in providing exceptional educators to present positive applied learning experiences for students inside and outside of the classroom.

California Polytechnic State University, San Luis Obispo

Cal Poly is a postsecondary institution that prides itself and is nationally recognized for the “Learn by Doing” teaching model. The practical hands-on opportunities students obtain in their courses allow them to demonstrate competency and expertise in their respective areas of study, making them more valuable in the professional world. Through the experiences provided by the university, students can transform their personal experiences into valuable knowledge and skill in their career area.

College of Agriculture, Food and Environmental Sciences

Specifically within the College of Agriculture at Cal Poly, students are given opportunities to apply classroom concepts through their laboratories, senior projects, and enterprise projects.

Agricultural Education and Communication Department

The Agricultural Education and Communication Department is within the College of Agriculture, Food, and Environmental Science and offers coursework in preparation for agricultural teaching. The department offers both a Bachelor of Science in Agricultural Education as well as a Credential and a Master's program. The faculty of the department has created a curriculum that allows students to fulfill courses needed to receive their credential within the undergraduate work.

Requirements to Become an Agricultural Educator

To be able to teach agriculture in the public high school setting in California, students must earn the Single Subject Agriculture Credential, the Agriculture Specialist Instruction Credential, possess a minimum of 3000 hours of occupational experience in agriculture, as well as fulfill a few other basic skills requirements (Commission on Teacher Credentialing). Within this project, the 3000-hour requirement will be the main requirement discussed.

3000-Hour Requirement

Under SB 187, to become an Agricultural Educator, teaching candidates must fulfill 3000 hours of occupational experience in agriculture (Agricultural Education Unit). If the candidate

participated in either FFA or 4H in high school, a maximum of 1500 hours of experience can be covered by these experiences. However, the other 1500 hours must be fulfilled after high school. The importance of this component of the credentialing process lies in the fact that educators cannot give effective hands-on learning experiences to their students if they have not experienced them personally. Agriculture is full of specialized and complicated learning concepts that take hands-on experience to fully grasp. In addition, many of the students who enter the Agricultural Education Program at Cal Poly have no agricultural experience at all and rely solely on their educational experiences in college to build their knowledge of the agricultural industry.

Value of Hands-On Learning

Hands-on learning challenges students to take education into their own hands; because they have to physically perform tasks to be successful, they take responsibility and ownership over their work and better understand the value of the information being presented. According to an online article produced by Everest College, the top 5 benefits of hands-on learning experiences are students are able to better retain course material, have access to materials, programs, and tools used in the their respective industry, receive personal guidance from their instructor, improve their critical thinking skills (Otis).

Enterprises

As mentioned under the College of Agriculture, Food, and Environmental Science heading, one hands-on learning experience Cal Poly students are able to use to fulfill their occupational experience in agriculture requirement are courses called enterprises. Enterprises are

projects which give students practical learning in the context of production agriculture.

Enterprises are offered in areas pertaining to livestock production, horticulture, crop science, as well as other agricultural areas. Agricultural Education students can receive a maximum of 6 units towards their undergraduate degree, however they can take as many as they would like.

Departments within College of Agriculture, Food, and Environmental Science that Offer Enterprises

The departments that offer enterprises are the Animal Science Department, the Food Science and Nutrition Department, the Horticulture and Crop Science Department, and the Natural Resources Department.

Publication of Enterprises Offered

The Department of Agricultural Education and Communication published the enterprises offered annually and copies can be found on the department website, aged.calpoly.edu, under “Agricultural Science Degree”.

Practical Benefits of Enterprises

Students who complete enterprise projects learn valuable knowledge about the agricultural industry as well as leadership, the value of teamwork, communication, responsibility, and the importance of evaluation after the completion of a project.

Leadership opportunities are available through enterprise projects as almost every enterprise has a student manager. Student managers are chosen by their responsibility and initiative shown in previous years on an enterprise. For some students, becoming a student

manager is their first experience in managing a group of people and this offers an invaluable learning experience in proper communication and delegation of responsibilities.

In regards to teamwork, every enterprise involves at least two students and usually far exceeds that number. Group projects within the enterprise open student's eyes to the benefits and challenges that come with working with multiple students and forces them to communicate effectively in order to be successful.

Lastly, the skill of evaluation is a talent students will use even if they do not enter the agricultural industry. Being able to look objectively at one's work is the key to success and improving performance.

Conclusion

Agricultural Education has changed drastically since its beginnings. It has become more inclusive of people outside the agricultural industry and therefore demands educators who understand and can pass practical skills and knowledge about agriculture to their students. The College of Agriculture, Food, and Environmental Sciences at California Polytechnic State University—San Luis Obispo offers opportunities, through enterprises, for teaching candidates to learn these skills about practices as well as improve their leadership skills. Better publication of these enterprises will increase the involvement of agricultural education students in enterprises but also improve the quality of students who choose to teach from the department because of their hands-on, practical experience.

Appendix VIII: Example Chapter Three

Appendix VIII: Example Chapter Three

Chapter Three

Methods

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In order to create an up-to-date senior project manual that reflects the changes in expectations and formatting of the senior project in the Agricultural Education and Communication Department, the first step is to consult faculty and create an outline of the information that should be presented in the manual. Faculty should also be consulted concerning possible senior project ideas in Agricultural Education and Communication to present in the manual. Lastly, faculty should be consulted about the formatting requirements and procedures that are required to submit senior projects to the university. Following faculty consultation, the author will find outside resources that best describe the process of formatting and submitting the senior project. The resources should focus on the American Psychological Association (APA) formatting guidelines, the exact format and content requirements of the senior project, and steps of senior project submission.

It is important when creating the manual to present the information in a simplistic format with as much detailed information as possible to guide students through the process of completing their senior project. An introductory section should be included that addresses the logistical information concerning the completion of the senior project, including what chapters must be completed in each of the three senior project courses and the selection of the senior project advisor. In addition, there should be five different sections defining the focus of each of

the five chapters of the senior project as well as specific information to need to be covered in each specific chapter. Lastly, there should be appendices at the end of the manual that include APA formatting guidelines, other formatting guidelines, example senior project chapters, and senior project submission instructions.

Faculty Consultation

Three professors were consulted concerning the creation of a new senior project manual. The first professor, Dr. Robert Flores teaches the AGED 460 course and served as the faculty advisor for the senior project. He explained how the expectations and formatting have changed for the senior project as well as how the senior project should now be formatted. He also provided resources to aid in understanding the process of senior project submission and gave general assistance in the formation of the manual.

Dr. Kellogg, the department head of the Agricultural Education and Communication Department, provided a list of criterion that Agricultural Education students should consider when choosing the topic of their senior project as well as a list of possible senior project suggestions for students pursuing a career in Agricultural Education.

Dr. Vernon, the main faculty advisor for students studying Agricultural Communication, also provided a list of criterion Agricultural Communication students should consider when choosing the topic of the senior project as well as a list of possible senior project suggestions for students pursuing a career in Agricultural Communication.

Identifying Available Resources

The author used both print and online resources in updating the senior project manual. The print resources used were the previous department manual as well as the book, *The Literature Review* by Machi and McEvoy. The previous department manual was consulted as a reference for general senior project requirements that are not specific to a research-based project. *The Literature Review*, was used to obtain a definition of a basic literature review to place in the updated manual. The online resources used were the Purdue Online Writing Lab, the APA formatting website, the Agricultural Education and Communication Digital Commons. The Purdue Online Writing Lab, also known as OWL, is a useful resource that describes the requirements for APA formatting standards. A screenshot of the website was placed in the appendix of the manual along with directions for finding information on the site. The APA formatting website also explains all relevant information regarding proper APA formatting. Screenshots of the APA website were included in the updated manual with instructions for navigating the site. Lastly, the Agricultural Education and Communication Digital Commons were used to find exceptional examples of the senior project manuscript from students in the department to use in the updated manual. All of these resources bring clarity and simplicity in understanding to the updated senior project manual.

Developing the Manual

After consulting the faculty of the Agricultural Education and Communication Department as well as researching and choosing the most appropriate resources for students to use in the completion of their senior project, the author began to develop the manual. It was important to include color in the manual as well as create a very user-friendly manual. In order

to create a more user-friendly manual, the author hyperlinked the entire table of contents to correlate with each section of the manual as well as hyperlinked important web pages for students use. To reflect the updated requirements of senior projects for the Agricultural Education and Communication Department, three different types of senior projects were outlined and explained in the Chapter Four section of the manual rather than focusing solely on research-based senior projects. In addition, numerous appendices were included that explained content that some students may be required to include in their projects and may need understanding to format and create.

Continuous Revision Process

The author met regularly with Dr. Flores to ensure that the correct information and requirements were being conveyed in the senior project manual. The meetings lasted from 30 minutes to 1 hour. Constant revision of grammar, spelling, and content is essential to presenting the most useful resource to students in the department.

Conclusion

It is essential in revising a senior project manual to consult faculty regarding the current requirements, utilize outside resources to explain how to properly format and compose the senior project, as well as create a manual that is user-friendly and contains up-to-date, correct and clear information. According to university standards, the faculty of each department dictates the requirements of the senior project for their students. Therefore, consulting faculty in the revision of the senior project manual is essential to providing the correct information to students. In addition, finding appropriate outside resources to present in the manual will bring ease and

clarity to students as they complete their project without the author having to create all the information to present. Lastly, the development and sequence of the manual needs to establish the manual as a resource to students in completing the senior project, not a hindrance to their progress. All the steps taken to revise the senior project manual serve to increase the quality as well as the uniformity of the senior projects submitted to the Agricultural Education and Communication Department.

Appendix X: Example Chapter Five

Appendix X: Example Chapter Five

Chapter Five

Summary, Conclusions, and Recommendations

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Summary

The updated senior project manual will be significantly more helpful to students in the Agricultural Education and Communication Department because the information presented is updated and applicable for the current senior project requirements. As the new manual begins to be used, students will be able to finish their senior projects more efficiently and the quality of senior projects in the department will improve. This manual should be continually updated to revise any changes in the requirements or formatting as well as add in new information that becomes pertinent to the fulfillment of this graduation requirement.

Recommendations

The following recommendations should be considered prior to beginning the next revision of the senior project manual:

1. Consult students and faculty regarding revisions needs.
 - This recommendation is based on the fact that revisions of the manual will greatly affect the students of the department as they work to fulfill this graduation requirement as well as the faculty who are advising the students of the department as they develop their senior project. Both student and faculty input is essential to ensuring the formatting and content requirements of the senior project are being included as well as

clearly communicated in the manual.

2. Meet regularly with the senior project faculty advisor.

- The success of this updated manual would not have been possible without constant assistance of the senior project faculty advisor. Meeting regularly with this individual will ensure you are meeting the department's expectations for the manual as well as assist you in developing the formatting and content to include in the manual.

3. Create more appendices or a handbook that explain functions of Microsoft Word pertinent to senior project.

- Numerous students struggle in formatting their senior project correctly because they have not been taught to use all the functions of Microsoft Word that would bring ease to formatting their senior project correctly. The author recommends creating appendices or a handbook outlining the step-by-step process to:
 - Creating a page break
 - Creating a Table of Contents
 - Creating Tables and Figures
 - Creating Bookmarks and Hyperlinks

4. Create a template for the Table and Figures page of senior project manuscript

- Students also struggle to create the Table and Figures pages of the senior project. Creating a template that they can easily input information into will bring ease to this process as well as increase the uniformity of the projects submitted to the department.

Conclusions

Completing the revision of the senior project manual for the Agricultural Education and Communication Department was a success because it met the objectives established at the beginning of the project. The change in formatting of the manual is more conducive to conveying the current requirements of the senior project for the department. In addition, the formatting and content requirements for the senior project manuscript are clearly delineated with tangible examples for each component. All the revisions made to the senior project manual will significantly improve the quality of senior projects students submit to the department as well as reduce confusion for students as they complete their senior projects. The only negative outcome of these revisions was the lack of student and faculty feedback on the revisions made as well as the revised manual's actual effectiveness. Though the author met the objectives set at the beginning of the project, student and faculty feedback would have improved the credibility of the updated manual as well as increased efficacy of the manual.

Chapter Five

Summary, Recommendations, and Conclusions

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