**Health Science Capstone:** *Be Extraordinary*

**Final Paper Guide**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_**

|  |
| --- |
| **Overall Purpose:** |
| The final research paper represents your mastery over the core health science skills in research, writing, and problem-based learning. This is your opportunity to make your mark and leave your legacy at our school and contribute to improvement of health for your self, your community, your nation, and world. Your health science Capstone research paper will undoubtedly be a useful opportunity to develop essential skills as you prepare for the next steps after high school. |
| **Grade Calculation:** |
| **Grading Rubric:** See LAST page of this packet! (Detach rubric & staple to cover of paper prior to submitting).  **Final Grade Goal: \_\_\_\_\_**  **Grade Calculation:** |
| **Requirements**: |
| **Due Date:** ONE ***(1)*** printed copies of the final paper is due on or preferably before ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*.**  **Absence Policy:** Since this paper represents a final cumulative showcase of your research from the entire semester, the paper will **not be accepted after the deadline for any reason**, including excused absences or printing problems during the week it is due. It is to your advantage to turn the paper in at least one or two days early in order to avoid any problems.    **Formatting:** The following must formatting requirements must be followed. No exceptions.   * Font: Times New Roman, 12 point * Margins: 1-inch on all sides * Double spaced * Header: Top left = Name, Instructor, Course, Date * Title: Centered; Summary of your research topic * Last Name + Numbered pages (Top right = Last Name Page #, ex: Smith 2)   **Components**: Each section MUST be titled with the section names listed below:   * Abstract * Introduction * Methods * Results * Lit Review * Discussion *(you may subtitle this section with Conclusion, Issue Analysis, & Intervention)* * Works Cited |

Project #2:

Introduction to Problem

**Objectives:**

* Demonstrate an understanding of a health problem in a clear, organized, and compelling way with proper spelling and grammar **(Written Communication)**
* Identify the patho-physiology, prevalence, and effects/impact of a health problem **(Problem ID)**
* Identify the risk factors and solutions to a health problem **(Problem Analysis)**
* Establish an over-arching purpose for researching a health problem **(Purpose)**
* Create a testable research question to investigate a health problem **(Research Question)**
* Use information from a variety of valid, reliable, and appropriately cites sources **(Citations)**

**Length**: Three **(3+)** double-spaced pages. This does not include the Works Cited page.

**References**:

* Minimum of 4 references required to be cited in text
* None must be journal articles for this assignment, but all must be valid and reliable sources

**Required components**: The paper may be divided into five paragraphs based on the following:

* + **1. Define the problem**
    - Identify the patho-physiology (disease process) in the body
    - Identify symptoms, prognosis (`expected outcome), and possible treatments
    - Identify basic preventative recommendations or screenings available
  + **2. Establish the extent of the problem**
    - Summarize the prevalence (including appropriate demographic breakdowns)
    - Explain trends in the spread, increase, or decrease of the disease over time
  + **3. Establish the scope of the problem**
    - Background information (provide historical context, relate to current issues, etc.)
    - Identify the impact (effects/costs/outcomes) of the problem
  + **4. Discuss the factors that impact the problem**
    - Identify the risk factors, causes & triggers
    - Identify solutions to the problem
  + **5. Clarify your purpose and research question**
    - Establish an over-arching purpose for researching a health problem including:

(1) desired outcome; (2) general population; (3) evidence sought; (4) type of solution

* + - Create a testable research question to investigate a health problem including:

Specific target population AND Variables of interest (like the IV/DV)

* + - Convince reader of the importance and need for further research

Project #3:

Primary & Secondary Research

**Objectives:**

* Explain the study design of a cross-sectional survey primary research study **(Methods)**
* Communicate results of a study with clear, evidence-based, and precise language **(Results)**
* Identify conclusions from secondary research studies and explain how they support or contradict the primary research study **(Literature Review)**
* Use information from a variety of valid, reliable, and appropriately cited journal sources **(Citations)**

**Sections**:

1. **Methods** *(Primary Research)* – ¾ to 1 page
2. **Results**  *(Primary Research)* –2 or more pages including data tables
3. **Literature Review** *(Secondary Research)* – 1-2 pages (1 solid paragraph for each source)

\*There is no exact length requirement, but recommendations are listed above.

**References**:

* Minimum of **3** scholarly references required in Literature Review
* BOTH must be scholarly journal articles for this assignment

**Required components**: The paper sections should include the following:

**METHODS:** *Provide a thorough and concise summary of methods used to collect and analyze data.*

* **Research Question**
* **Study design:** 
  + **Survey type** *(ex: cross-sectional survey, pilot-test)*
  + **Format** *(online or paper-based, etc.)*
  + **Consent letter** *(purpose, anonymity, voluntary participation, instructions, etc.)*
  + **Description** *(# of questions, format of questions, length, etc.)*
* **Population:**
  + **Recruitment** *(how did you select or find the respondents?)*
  + **Procedure** for data collection (*how survey was distributed? Approximately how long it took them? were they provided with any incentive/bias?)*
* **Demographic Results** of target population *(ex: age, gender, race/ethnicity, other characteristics)* [Give actual data when possible, as both a total number and percentage of study population]
* **Sample size** *(n=?)*& **response rate** *(provide actual or estimated percentage of targeted population that completed survey)*
* **Set-up of Data Analysis:**
  + **Analysis methods used:** *(ex: 2x2 table was constructed and relative risk was calculated)*
  + **Sample of primary RF/Outcome question:** For the variables you choose to analyze in your primary 2x2 table *[You can write out the actual questions and answer responses]*
  + **Criteria** **for groupings***: (how risk factor and outcome were defined based on answer choices)*

**RESULTS:** *Provide a clear, concise, and comprehensive summary of data findings using supporting tables and graphs.*

* **Research question** *(Restated)*
* **Basic item analysis:** Include a table or bullet-pointed list of basic results for each question
  + **i.**e. 55% (11/20) of respondents reported that they own an iPhone
  + Summarize the findings from basic item analysis
* **Relative Risk:**
  + **Hypothesis**: *Positive correlation between risk factor and outcome variables that were expected*
  + **2x2 table,** with clear descriptive labels
  + **Relative Risk** calculation and result
  + **Relative risk statement** write out a sentence expressing the meaning of the relative risk

**LITERATURE REVIEW:** *Describe how your results relate to previous research studies & existing data sets*

* **Scholarly source Paragraphs:**
  + Purpose of study
  + Conclusion of study
  + Relationship to primary research study methods & results
  + Discussion and analysis

Project #4:

Discussion & Abstract

**Objectives:**

* Make a strong conclusion using the Claim-Evidence-Warrant format **(Discussion)**
* Analyze issues in data analysis that researchers commonly face **(Discussion)**
* Identify an evidence-based intervention (solution) for your problem **(Discussion)**
* Write a concise abstract communicating the purpose, objective, methods, results and conclusion of your research study **(Abstract)**

**References**:

* Minimum of **1 source reference required** in para. 3 of Discussion (support for intervention)
* It may or may not a scholarly journal article (your choice!) but must be a valid and reliable source

**Sections**:

1. **Discussion** – 3 paragraphs
   1. **Paragraph 1**: **Conclusion** *(claim-evidence-warrant)*
   2. **Paragraph 2: Issue analysis** (*2 issues with methods/data analysis presented & analyzed)*
   3. **Paragraph 3:** **Intervention** *(1 evidence-based, aligned intervention presented)*
2. **Abstract** - 1 paragraph *(includes purpose, objective, methods, results, and conclusion)*

**Discussion Section Components:**

**CONCLUSION (Paragraph 1)** should be formatted in the Claim-Evidence-Warrant framework

* **Claim (Conclusion):** The answer to your research question (how the variables studied are related).
* **Evidence (Data):** The data you gathered to support this (your primary & secondary data).
* **Warrant (Explanation)**: A statement authorizing the claim (explains why & how data supports claim).

**ISSUE ANALYSIS (Paragraph 2)** should analyze **two** issues (from the list below) related to survey design, data collection, or data analysis. You may also propose an issue that is not on this list, as there are infinite other things that you could discuss in a scholarly way.

* Over generalizing results
* Biased methodology
* Correlation does not imply causation
* Not considering other related factors
* Being able to know what data is valid
* Reported behavior vs. actual behavior

**INTERVENTION (Paragraph 3)** should propose an intervention (solution) to the problem in a clear and compelling way.

* Clear, detailed recommendation for an intervention that aligns with the conclusion
  + **DO NOT** include specific logistical details about the intervention
    - i.e. **DO NOT** say “On May 30th, 2013, I will teach a group of ninth graders from Ms. Smith’s advisory about…”
  + **DO** include general details that make the intervention clear
    - i.e. **DO** say “An educational intervention that targets teens in high-risk groups and focuses on how to access and use contraception should be provided since lack of knowledge is highly correlated with teen pregnancy.”
* One supporting source reference is needed (look for a similar intervention that was studied!)

**IN-TEXT CITATIONS**

The method of in-text citation you should use in your Capstone paper is called the APA format. APA (American Psychological Association) style is most commonly used to cite sources within the social sciences. It is different from MLA, which you will use the majority of the time in other non-science courses. When using APA format, follow the author-date method of in-text citation. This means that the author's last name and the year of publication for the source should appear in the text, for example, (Jones, 1998), and a complete reference should appear in the reference list at the end of the paper.

To in-text cite, indicate right in the text—in parentheses—the author(s) and year of publication of the reference you are citing. Since the citation becomes part of your sentence, you delay the appropriate punctuation until after the parentheses:

**In recent decades, anthropogenic activities such as deforestation, desertification, and urbanization have significantly altered the land surface (Nicholson 2007).**

Many writers identify the source as soon as they begin the reference, including the author’s name directly in the text and supplying only the year in parentheses:

**Furlong et al. (2001) estimate that the first Mt. Erebus eruption . . .**

When citing web-based sources in your text, you will often encounter sources with no author listed. Handle these cases just as you would when citing print sources—that is, if no author’s name is given in the original, offer the title of the web page, or the publication’s title, or the publisher’s name. If such a title is lengthy enough to be awkward, offer a clear shortened form of the title, with the goal of making it easy for us to find the source on the works cited page.

**Females are more likely than males to have experienced a migraine or severe headache (CDC 2011).**

**WORKS CITED REFERENCES PAGE:**

***An Article in a Scholarly Journal***

**Author(s). "Title of Article." Title of Journal Volume.Issue (Year): pages. Medium of publication.**

Bagchi, Alaknanda. "Conflicting Nationalisms: The Voice of the Subaltern in Mahasweta

Devi's Bashai Tudu." Tulsa Studies in Women's Literature 15.1 (1996): 41-50. Print.

Duvall, John N. "The (Super)Marketplace of Images: Television as Unmediated Mediation

in DeLillo's White Noise." Arizona Quarterly 50.3 (1994): 127-53. Print.

***A Web Site***

**Editor, author, or compiler name (if available). Name of Site. Version number. Name of**

**institution/organization affiliated with the site (sponsor or publisher), date of**

**resource creation (if available). Medium of publication. Date of access.**

The Purdue OWL Family of Sites. The Writing Lab and OWL at Purdue and Purdue U,

2008. Web. 23 Apr. 2008.

Felluga, Dino. Guide to Literary and Critical Theory. Purdue U, 28 Nov. 2003. Web. 10

May 2006.

You may use n.p. if no publisher name is available and n.d. if no publishing date is given.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Health Science Capstone**

**FINAL PAPER RUBRIC:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Standard** | **No points**  **(Incomplete)** | **2 points**  **(Poor)** | **4 points**  **(Below Average)** | **6 points (Average)** | **8 points**  **(Good)** | **10 points (Excellent)** |
| **WRITTEN COMMUNICATION:**Demonstrate clear, organized, and compelling writing proper spelling and grammar | Impossible to read or comprehend. | -Writing is unclear, disorganized and not compelling  -Many spelling & grammar errors | -Writing is somewhat clear, organized and compelling  -Some spelling & grammar errors | -Writing is fairly clear, organized and compelling  -Few spelling & grammar errors | -Writing is clear, organized and compelling  -Few spelling & grammar errors | -Writing is very clear, organized and compelling  -No spelling & grammar errors |
| **ABSTRACT:**  Writes a concise abstract communicating the purpose, objective, methods, results, and conclusion of the research study | Missing Abstract. | -Abstract is missing more than three or more components | -Abstract is missing two components. | -Abstract lacks clarity and precision in word choice or has components that are missing or misaligned. | -Abstract is moderately clear and includes an aligned purpose, objective, methods, results, and conclusion. | -Abstract uses clear and precise word choice and includes an aligned purpose, objective, methods, results, and conclusion. |
| **INTRODUCTION:**  Identify the risk factors and solutions to a health problem. Identify the patho-physiology, prevalence, and effects/impact of a health problem | Missing Introduction. | -Few or no components of problem ID included  -Info is rarely thorough & aligned | -Few components of problem ID included  -Info is somewhat thorough & aligned | -Some components of problem ID included  -Info is mostly thorough & aligned | -All components of problem ID included  -Info is mostly thorough & aligned | -All components of problem ID included  -Info is thorough & aligned |
| **METHODS:**  Explain the study design of a cross-sectional survey primary research study. Establish an over-arching purpose and a testable research question to investigate a health problem. | Missing Methods section. | More than 4 pieces of required content are missing | 3-4 pieces of required content are missing | 1-2 pieces of required content is missing | -All required content is included, aligned, and evidence-based | -All required content is thoroughly but concisely presented, aligned, and evidence-based |
| **RESULTS:**  Communicate results of a study with clear, evidence-based, and precise language | Missing Results section. | More than 4 pieces of required content are missing | 3-4 pieces of required content are missing | 1-2 pieces of required content is missing | -All required content is included, aligned, and evidence-based | -All required content is thoroughly but concisely presented, aligned, and evidence-based |
| **LITERATURE REVIEW:**  Identify conclusions from secondary research studies and explain how they support or contradict the primary research study | Missing Lit Review section. | 3 pieces of required content are missing | 2 pieces of required content are missing | 1 pieces of required content is missing | -All required content is included, aligned, and evidence-based | -All required content is thoroughly but concisely presented, aligned, and evidence-based |
| **DISCUSSION** *Conclusion (P1)* provides a claim-evidence-warrant format for discussing the conclusion of the research study. *Issue Analysis (P2)* identifies and analyzes at least two issues with the study methods or data analysis that should be considered. *Intervention (P3)* recommends and supports with evidence an intervention that aligns with the variables discussed in the conclusion | Missing Discussion section. | Claim-evidence-warrant logic is missing in first paragraph. | -Two missing parts in the Claim-evid -warrant process. Or major errors in logic, coherency, thoroughness or alignment. | -Two missing parts in the Claim-evid -warrant process. Or two errors in logic, coherency, thoroughness or alignment. | -One missing part in the Claim-evid -warrant process. Or one error in logic, coherency, thoroughness or alignment. | -Claim, evidence and warrant are logical, coherent, thorough and aligned to purpose. |
| **WORKS CITED*:*** (In-text citations & References page) Use information from a variety of valid, reliable, and appropriately cited sources | No sources used. | -Info from 1 valid, reliable and aligned source  -Major errors in in-text citation or citation page | -Info from 2 valid, reliable and aligned source  -Major errors in in-text citation or citation page | -Info from 3 valid, reliable and aligned source  -Major errors in in-text citation or citation page | -Info from 4 valid, reliable and aligned source  -Error-free citation page  -Correct in-text citation formatting | -Info from 5+ valid, reliable and aligned source  -Error-free citation page  -Correct in-text citation formatting |

**Total Score: \_\_\_\_ / 80**

***Grading Key:***

A (90-100%): 72-80 points

B (80-89%): 64-71 points

C (70-79%): 56-63 points

D (60-69%): 48-55 points

F (59% or below): 47 points & below