



**Western Kentucky University**

**Architectural and Manufacturing Sciences Department**

**Graduate Project Writing Guide (AMS 690)**

## Table of Contents

Graduate Project Proposal.....	1
Suggested Organization .....	1
I.    Project Introduction/Overview / Background.....	1
II.   Project Goal or Purpose.....	1
III.  Project Approach/Methods.....	1
IV.  Project Deliverables / Expected Results.....	1
V.   Requirements / Resources / or Identify Process.....	2
VI.  Assumptions .....	2
VII. Limits and Exclusions .....	2
VIII. Milestones.....	2
Expectation .....	2
Project Management Resources .....	2
Graduate Project Writing Guide .....	4
Suggested Chapter Organization.....	4
1. Introduction.....	4
2. Literature Review.....	4
3. Methodology .....	4
4-? Finished Product .....	4
Summary & Discussion .....	5
Quality Indicators.....	5
WWHAM.....	6
What.....	6
Why.....	6
How.....	6
Analysis.....	6
Meaning .....	7

## Graduate Project Proposal

Graduate project proposals should specify and put forward plans for the development of a project effort consistent with a six credit-hour graduate experience. The formal proposal should address, at a minimum, each of the points below. Proposals should be developed in consultation with the AMS graduate advisor/graduate committee. All paperwork should be submitted with a cover page and appropriate identification of the proposal.

### Suggested Organization

#### I. Project Introduction/Overview / Background

State the reason the project is being undertaken. Provide a background and a **case for the project that is grounded in theory** that describes the problem or issue this project will seek to resolve.

Be specific as to how this project came about and why it is important. Why should we care about this project? Make a compelling and scholarly argument for the project and what it will accomplish.

#### II. Project Goal or Purpose

Provide clear, concise goal(s) statement(s) for the project or scope of work. What is the purpose of the project?

Spend time developing the goals and objectives for the project. Understand and clarify the beginning and end of the project. Avoid projects that have unclear or fuzzy deliverables. Select projects that have specific outputs and unambiguous results. All effort for the project should be directed toward the goals and objectives.

#### III. Project Approach/Methods

State the proposed approach or methods that will be used to meet the project goal(s). Examples might include, but not be limited to, the development of an artifact, prototype, design, applied research, or concept, etc.

Provide a detailed procedure with evaluations and controls. Make sure to include time and effort for the project manual/write-up, committee reviews, defense, etc. Link this to milestones or the project schedule in some way. Is your process congruent with your deliverables, WBS, schedule, and milestones? Does it result in the outcomes and stated objectives?

#### IV. Project Deliverables / Expected Results

List the products or services that are the intended outcomes to be produced in order to fulfill the goal(s) of the project. Deliverables should have measurable results and be specific in terms of what will be presented and documented at the project defense.

Enhance and detail the expected results from a deliverables point-of-view. What will the committee see/touch/receive as a result of this project? Not just the general benefits or outcomes, but the tangibles (i.e., documents, reports, artifacts.)

**V. Requirements / Resources / or Identify Process**

List the specifications for each deliverable, which may include quality, quantity, or use of specific products/components. List the critical success factors required for project success at completion.

Be specific in listing the actual resources you will need (e.g., equipment, people, software, knowledge, supplies, etc.) Obviously, we don't care that you are using a #2 pencil, but do provide pertinent details and allocate resources so they are congruent with the project schedule.

**VI. Assumptions**

List all conditions believed to be true before beginning the project. Examples might include assumed access to facilities and/or equipment, planned delivery dates, or client involvement. Assumptions are items that you expect will hold true now, and throughout the duration of the project.

**VII. Limits and Exclusions**

Specify project limitations and delimitations. Define the items/products/services that are not part of this project. Clarify items /products / service/deliverables that may be produced to minimum levels. Be specific about what will NOT be included.

**VIII. Milestones**

Provide an estimated project schedule with milestones and completion dates.

Even though you will have dates on your project schedule, also place dates on the milestones listed on the proposal. You may want to develop a Work Breakdown Schedule (WBS) to make sure that you have allocated the work effort correctly. What activities, milestones, and controls are included so that you know that you have successfully completed the objectives?

**Expectation**

The finished proposal should have the look and feel of a comprehensive professional project plan of high quality. It should reflect the nature of the project and have enough depth such that the project could be executed successfully upon approval of the proposal. The proposal should have enough information so that you can track the progress of the project implementation against the plan, make adjustments, corrections, and calculate earned value upon request.

**Project Management Resources**

Cooke, H. S. & Tate, K. (2005). *The McGraw-Hill 36-Hour Project Management Course*. New York: McGraw-Hill. ISBN-13 9780071438971

Gray, C. F., & Larson, E. W. (2003). *Project Management: The Managerial Process (2<sup>nd</sup> ed.)*. New York: McGraw-Hill Irwin. ISBN: 0072833483

- Heldman, K. (2007). *PMP: Project Management Professional Exam Study Guide* (4th ed.). Alameda, CA: Sybex. ISBN-10: 0782141064
- Kerzner, H. (2006). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling* (9th ed.). New York: Wiley & Sons. ISBN: 978-0-471-74187-9
- Lewis, J. P. (2007). *Fundamentals of Project Management* (3<sup>rd</sup> ed.). New York: Amacom. ISBN: 0814408796
- Mantel, Jr., S. J., Meredith, J. R., Shafer, S. M., & Sutton, M. M. (2007). *Core Concepts: Project Management in Practice*. Hoboken, NJ: John Wiley & Sons. ISBN: 0470121645
- Newbold, R. C. (1998). *Project Management in the Fast Lane*. Boca Raton, FL: St. Lucie Press. ISBN: 1574441957
- Plummer, Jr., F. B. (2007). *Project Engineering: The Essential Toolbox for Young Engineers*. Boston: Butterworth-Heinemann/Elsevier Science. ISBN 0750682795
- Project Management Institute <http://www.pmi.org/>
- MS Project Tutorial <http://www.profsr.com/msproject/msproj01.htm>

## Graduate Project Writing Guide

### Suggested Chapter Organization

#### 1. Introduction

Provides a concise statement of the problem, need, or questions investigated

State the goals of the project

Outline the project

Provide rationale for the project

#### 2. Literature Review

Critically reviews and analyses the professional literature relevant to the problem investigated

Cite the literature related to the project

Restates the goal of the project in regard to what has and has not been done

State the unique contributions of the project

#### 3. Methodology

Describe how the project was developed

(Include all planning documentation)

Describe all materials and procedures

Discuss project design characteristics

#### 4-? Finished Product

Give a written explanation of the project

Include the entire project (This is the heart of the project)

Presents findings clearly, discussing the statistical and/or practical significance

Schedule - Compares the actual schedule with the proposed schedule and note reasons for discrepancies.

Budget - Summarize the cost associated with the project and compare actual costs with the original estimates

Provide evidence of the completed deliverables as planned.

(This might include annotated screen captures of all computer related material, the actual physical product, digital pictures, etc.)

## Summary & Discussion

Concise summary

Evaluate the project, analyze the results

Specifies the strengths and weaknesses of the project in light of existing theory in the field and describes how the project could be improved if replicated

States conclusions, discusses applications and possible extensions of project

Discussion of what should or could be done next

In addition to the above, the final project report should adhere to form and style conventions for research/project writing, including front matter, body narrative, and end matter. Work collaboratively with your committee chair regarding expectations.

## Quality Indicators

- **Originality:** Is the work original and creative?
- **Meeting a need:** Does the project address a specific need or concern? Does it demonstrate adequate inspiration for the work? Does it tell us who this project is for and why it matters?
- **Process:** Was the process or method used in the project appropriate to the problem or topic? How well did the student adapt the process and methods for the situation? Was a scientific, experimental process followed or applied with appropriate insight?
- **Completeness:** Did the project result in some meaningful body of work or artifact?
- **Evaluation:** Was there some form of evaluation appropriate to the project's methods and outputs?
- **Potential impact:** Does the project have the potential to be used or to serve as a platform for future work? Does it make an intellectual contribution?
- **Presentation:** Was the project report clear, professional, informative, and appropriate to the topic and the audience?
- **Overall quality:** Is the work of high quality overall?

(Adapted from UC Berkeley School of Information Master's Project Guidelines)

## WWHAM

WWHAM is an acronym for the five necessary parts of any graduate project. Specifically, a graduate project must address: What is going to be done; Why this is going to be done; How the project will be carried out; Analysis or presentation of deliverables; and, the Meaning of the project. Each of these will now be discussed more fully.

### What

A graduate project must begin with some discussion of what you will do/did. This generally involves some background information highlighting the need and importance/significance of the project. The reader needs to be told exactly what the problem/scope of the project is and what will be addressed. This section should describe the conceptual basis for this project. For projects, this should be in the first chapter, although it is possible to combine the *what* discussion with other necessary parts of the final report.

### Why

In planning and carrying out a graduate project, certain choices must be made. First, the project itself must be selected. Then, the deliverables to be developed, methods and project design must be determined. Such decisions should be grounded in generally accepted project management practice. Thus, the *why* section develops support for the topic and substantiation for the specific decisions concerning the work plan, variables of interest, methods, etc. Commonly contained in a section of the graduate project called, *Literature Review* or *Project Rationale* students analytically review relevant sources in developing the project plan.

### How

The *how* section provides the road map for carrying out the project and analyzing the information/knowledge. Commonly placed in a *Methodology* chapter, this section explains what will be done in order to execute the project. As repeatability is a canon of good science, this section must present enough detail so that another student/project manager could hypothetically duplicate the entire project. Several broad features of a graduate project should include attention to issues such as: transparency of techniques used, minimizing errors, generality to related issues, soundness of the approach, and trustworthiness of the findings.

The graduate project must include a clear plan of how the project will be accomplished, specifically the procedures used, resources required, and a schedule of events. The *how* should include what information and data will be collected and analyzed in support of project goals or to solve the problem presented. A scientific approach should be the first option with the consideration of varying methodologies as needed to address specific issues.

### Analysis

Once data, information, or project work elements are completed, some analysis must take place. Data can be numbers or words. In a quantitative graduate project, this would be the presentation of some type of numerical analyses. Whatever the nature of the completed work elements, the graduate project must include some in-depth analyses, where the findings are presented and described.

### **Meaning**

Probably the most important part of the graduate project is the set of conclusions drawn. Here, the knowledge and information gained are presented in a *Summary and Discussion* section and are intertwined with the *Project Rationale* and scope of work, which was the basis for the study. In this way, the meaning of the project can be determined (conclusions drawn), and recommendations for other projects or, perhaps, implications for practice suggested. However, the *meaning* section is a key component of the graduate project as it presents the major contributions of the study.