

Texas A&M University-San Antonio
College of Arts and Sciences
Water Resources Science and Technology

WATR 4181 RESEARCH PROJECT (1 SCH)

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COURSE MATERIALS

- *Research Methods for Science* by Michael P. Marder. ISBN: 0521145848
- Access to the internet.

COURSE DESCRIPTION

This course provides an independent research opportunity that will allow undergraduates majoring in Water Resources Science and Technology to make an original intellectual contribution to the subject. The research will be conducted in collaboration with a faculty mentor. Students may repeat the course once as an elective for additional credit.

COURSE OUTCOMES

Depending on the research experience, a student enrolling in WATR 4181 (note: students can take this course for a repeated credit twice) can:

Level	Experience	Expectations
Entry	First-time research experience	The expectation is to learn how to develop a hypothesis, a research problem and related questions. Students will also learn how to perform literature search, read technical papers, and brief writing.
Intermediate	Students with at least one semester of research experience	The expectation is to learn how to frame a problem, develop research plan, and conduct lab experiments, field sampling, or surveys.
Advance	Students with at least two semester of research experience	The expectation is to develop the ability to evaluate the feasibility of a research plan, independently collect and present data, and write a research report.

METHOD OF INSTRUCTION

Regular meetings with research project advisor on small group or individual basis. Meetings will guide students to perform literature searches, discuss articles relevant to students' research projects, present research progress, and write reports.

Students must submit the **research notebook** on which all details should be recorded during the course of the research experience. You may ask for one from your advisor or use your own notebook.

METHOD OF ASSESSMENT

- Literature survey, methodology design, and discussion (20%)
- Two Interim project reports and presentations (every five weeks) (30% @ 15% each).
- Final research report and presentation (50%)

RESPONSIBILITIES AND EXPECTATIONS

Participating in a research project means that you will:

- Honor the time commitment and stick to it
- Follow lab safety rules and policy...and the etiquette
- Accountable to the quality of work
- Take ownership of your work

****POLICY TO USE AI-ASSISTED TECHNOLOGY**

Use of Generative AI Permitted Under Some Circumstances or With Explicit Permission

There are situations and contexts within this course where you may be asked to use artificial intelligence (AI) tools to explore how they can be used. Outside of those circumstances, you should not use AI tools to generate content (text, video, audio, images) that will end up in any student work (reports and theses) that is part of your evaluation in this course. Any student work submitted using AI tools should clearly indicate with attribution what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, students should reach out to their instructor for clarification before submitting work for grading. Use of AI-generated content without the instructor's permission and/or proper attribution in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

Report Format:

1. Typeface Specifications

Theses should be written in a conventional font, approved by the committee chair (e.g., Arial, Verdana, Times New Roman). The type size must be 12 point.

2. Line Spacing

Line-spacing of the narrative text may be 1 1/2 spaces or double spaced. Mixing spacing is not acceptable. Single spacing is used only for such specific and appropriate purposes as long, blocked, and inset quotations, footnotes, endnotes, and itemized or tabular materials.

3. Margins

All typing must be 1 inch on the left, 1 inch on the right, and a minimum of 1 inch on the top and bottom of each page, except for the page number, which is placed one-half inch from top of the page and even with right-hand margin. All illustrations and tables in the thesis must conform to the margin requirements in every way.

4. Pagination

Every page in the report except the Title page must be numbered.

Required Parts of the Report

1. Title Page

The Title Page for thesis must follow the style, spacing, and form of the example shown in APPENDIX A.

2. Abstract

The Abstract Page must follow the style, spacing, and form of the example. The Abstract, which is placed immediately after the Approval page, is the first numbered page, iii, centered at the bottom of the page. The text of the Abstract must not exceed 150 words.

3. Table of Contents

4. All major headings and subheadings must be included in the Table of Content. Use the built-in function in M.S. Word to build the Table of Contents.

5. Main Text

Main texts must be structured, with clear divisions:

a. Level of heading

1. LEVEL 1

1.1 Level 2

1.1.1 Level 3

b. Divisions

Must contain (first-level)

1. INTRODUCTION

1.1. Motivation and Significance

1.2. Objectives

2. BACKGROUND (or LITERATURE SURVEY)

3. METHODOLOGIES

3.1. Research Flow Diagram

3.2. Materials

3.3. Methods (including both experimental, data collection, data analysis, statistical methods, etc.)

4. RESULTS & DISCUSSION

5. CONCLUSIONS

6. REFERENCES

We will follow APA style for citation and bibliography

<https://apastyle.apa.org/style-grammar-guidelines/references/examples>

Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. *Psychology of Popular Media Culture*, 8(3), 207–217. <https://doi.org/10.1037/ppm0000185>

- **Paranthetical citation:** (Grady et al., 2019)
- **Narrative citation:** Grady et al. (2019)

[Sample Title Page]

WHEN AN ANDROID DOESN'T KNOW HE'S AN ANDRIOD: HOW CAN "IT" NOT
KNOW WHAT "IT" IS?

A Report

by

JAMES F. SEBASTION

Submitted to

Water Resources Science and Technology

Texas A & M University-San Antonio

in partial fulfillment of the requirements for the degree of

Bachelor of Science

May 2025