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SET 490-102: Senior Project in Surveying

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School of Applied Engineering & Technology
Department of the Built Environment

SET 490 - Senior Project in Surveying

Instructor: Dr. Laramie Potts

Contact: email lpotts@njit.edu

Office Hours in 2510 GITC: Monday 3:30 – 5:30 pm; Or by appointment

Classroom: FMH 404 (**Wednesday: 6:00 pm – 7:45 pm**)

Course Description:

The student works on an individual surveying project guided by the department staff. The project should concentrate on a specific aspect of surveying not necessarily on field measurements. It must include library research, a written report, and oral presentation of findings.

Objectives:

- To experience an in-depth study of a specific surveying topic
- To familiarize the student with report writing
- Build communication skills needed for preparing and delivering an oral presentation
- Prepare a draft article for publication in a national professional publication (i.e, POB, American Surveyor, xyHT, Professional Surveyor tec.,)

Course Outline

Week	Topic	Tasks	Activity
<u>1</u> 01/22	<u>Introduction</u> <ol style="list-style-type: none"> Select Topic for Senior Project Procedures and Protocol Formats and Schedule <u>Project Proposal</u> <ol style="list-style-type: none"> Finalize Scope of Project Literature Search Discuss Project Requirements Discuss Project Benefits 	Objectives of SET 490 Select Your Topic Identify Objectives Define Project Title Refine Project Scope Refine Project Requirements	Video via Canvas In-class meeting
<u>4</u> 2/12	<u>Submission of Proposal</u> <ol style="list-style-type: none"> Problem Statement of Project Data Collection Data Processing Data Analysis 	Project Title List Project Objectives Literature review Bibliography	Online Submission
<u>7</u> 3/11	<u>Preliminary Result</u> <ol style="list-style-type: none"> Data and Field Procedure Computations (Corrections and Reductions) 	Written Paragraphs on: <ul style="list-style-type: none"> Data Collection Data Processing Initial Results 	Online Submission
<u>11</u> 04/08	<u>Presentation - Progress Report</u> <ol style="list-style-type: none"> Methodology Preliminary Results 	5-minute Presentations <ul style="list-style-type: none"> Project Significance Initial Results 	In-class Meeting Discussions
<u>15</u> 05/05	<u>A) Executive Summary</u> Not less than 1500 word Summary. Include subheadings (Intro, Method, Results, etc.) <u>B) Final Report</u>	<u>A) 2-page Summary:</u> <ul style="list-style-type: none"> Project Objectives Data collection & Processing Quantify main results <u>B) Final Report</u>	Online Submission
<u>16</u> 05/13	<u>Final Report & Presentation</u>	15-minute Presentations	In-class meeting

Grading

- Proposal.....15%
- Preliminary Results.....15%
- Intermediate Report 10%
- Final Report 35%
- Summary10%
- Final Presentation.....15%

**COURSE LEARNING
OUTCOMES (CLO)**

By the end of the course students should be able to:

1. Demonstrate the proper application of surveying principles to design a surveying measurement system to meet project requirements that satisfied industry standards.
2. Demonstrate adaptability in survey measurement system design to meet requirements on accuracy and timely completion of project deliverables.
3. Prepare a written research proposal
4. Perform a written literature review on their research topic
5. Perform independent research and deliver project results according to a prepared time table.
6. Prepare and present an oral presentation on the results of the senior project. Presentations may be presented in a public forum where general members of IAB are present. Students will prepare written proposals of their senior project. Write an effective senior report according to acceptable criteria. Demonstrate abilities in public speaking with oral presentations of senior project
7. Demonstrate the ability to identify unforeseen obstacles in a measurement system and to find a solution to the problem in order to meet the requirement project requirement.
8. Students will demonstrate knowledge of the need to submit to continuous professional development workshops related to surveying engineering technology.
9. Participate in group discussions on projects of fellow students

Written Report: Content and Format

Proposal:

A proposal is a detailed plan regarding your chosen topic of investigation. This report should cover the following points and provide answers to questions such as:

1. Define your project clearly and specifically.
 - a. What exactly is the objective of your project?
 - b. What exactly will your project produce?
2. **Why** is it important or what is its significance (to Surveying, Engineering, and Science etc.)
3. **What** knowledge and resources will you need to do it?
4. **How** will it be done?
5. Prepare a timetable chart with proposed project tasks and completion dates for each task of your project. Create the following chart;
6. Show communications (email) with editor of professional journal for potential publication of your senior project results

(Task 1)*								
(Task 2)*								
(Task 3)*								
"								
"								
"								
(Task n)*								
Week #	1	3	4	6	11	13	14	15

*Specify and actual task

[Basics of Project Management: <https://www.youtube.com/watch?v=qkuUBcmmBpk>]

Intermediate (Progress) Report:

Provide a progress report on what has been accomplished. The report should

- Clearly outline the task(s) that have been completed and the status of those that are not
- Summarize current findings and possible deviation from the original proposal
- Correlate your progress against your proposed timetable
- Explain any deviation from the original proposal

Final Report:

Prepare a well written and detailed report on your project. It should have some variations of the following main heading (or chapters):

1. Introduction (state the problem and provide overview on topic and the project)
2. Project development (describe project details)
3. Experiments (describe and discuss field observations, procedures etc.,)
4. Results (explain the results, graphs, and tables)
5. Conclusion. (Summarize the important finds and discuss conclusions you draw from this work. Include potential improvements as a follow-up phase of this topic)
6. References (SaLIS style format of your list of references) such as books and/or articles dealing with your topic must be part of the report. Owner(s) of materials that were downloaded from the internet must be acknowledge as well