

**Course Tag Reflection Exemplar**  
**Scientific Inquiry & Research Skills**

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**CEE 478: Rehabilitation of Civil Infrastructure**

**Identify the course learning objectives in the syllabus that are clearly aligned to Scientific Inquiry & Research Skills and respective assignment(s).**

1. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. (ABET Student Outcome #5)

Scientific Inquiry and Research Skills (Two, group term projects) 35%

2. Acquire and apply new knowledge as needed, using appropriate learning strategies. (ABET Student Outcome #7)

Scientific Inquiry and Research Skills (Two, group term projects) 35%

**Explain the connection between specific assignment(s) and Scientific Inquiry & Research Skills. At least 30% of the course grade must engage students in the selected competency for the course to be tagged.**

Term projects involve conducting research on problems facing existing civil infrastructure, current practices, state of the art/practice assessment and retrofit methods, and most important set of proposed recommendations for better solutions/practices. The recommendations/supporting arguments through research, data, and quantitative and qualitative evidence that can generate new knowledge.

Term Project (I) 15% Scientific Inquiry and Research Skills

Term Project (II) 20% Scientific Inquiry and Research Skills

**Describe in detail the instructional strategies faculty use to intentionally teach Scientific Inquiry & Research Skills in the course.**

Scientific Inquiry and Research Skills (Term Projects 35%)

During class discussions, the instructor encourages the students to consider the following aspects while developing a solution to a problem: existing condition of the structure, the surrounding environment, cause of the problem, non-destructive tests needed, repair materials (properties, application, cost, service life, etc.), construction logistics, and future maintenance plans. Term projects require students to Collect data, Analyze data, Accept/reject a hypothesis, apply methods, consult secondary literature.

**Describe the feedback tool(s) faculty use to support students' competency development on Scientific Inquiry & Research Skills.**

Detailed written feedback on term projects.

You reviewed two technical papers by others, and your recommendations were excellent, but why your recommendations agreed with one but not the other?