

1. CEE 4850 – Forensic Engineering
2. Course credit hours: 3
 Contact hours per week: 3
 Credit category: Engineering Topics (2 credits)
 Other (1 credit)
3. Course coordinator: Benjamin Mohr
4. Textbook: N.J. Delatte, *Beyond Failure: Forensic Case Studies for Civil Engineers*, ASCE, 2009.

Supplemental materials: Handouts, as appropriate

5. Course information:

2020 Catalog description	Forensic case studies in civil engineering.
Prerequisite(s)	CEE 4310 or CEE 4320
Prerequisite(s) or Concurrent Enrollment	CEE 4800 may be taken concurrently
Course type	Selected Elective

6. Course instructional outcomes:

Course Outcome No.	Course Outcome (CO)	ABET Student Outcome
CO1	Understand the role of communication in engineering design and construction	2, 4
CO2	Understand the role of ethics in engineering design and construction	4
CO3	Understand the role of redundancy in engineering design and construction	2
CO4	Understand the critical nature of connections in engineering failures	2
CO5	Understand the process of forensic investigation	2, 4, 7

ABET criterion 3 Student Outcomes addressed by this course:

SO No.	Student Outcome (SO)
3.2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3.4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

3.7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies
-----	--

7. Course topics:
 1. Issues Related to Forensic Engineering (10%)
 2. Failures due to Ethics (15%)
 3. Failures due to Structural Design (15%)
 4. Failures due to Construction (15%)
 5. Failures due to Metals (Materials) (10%)
 6. Failures due to Concrete (Materials) (10%)
 7. Failures due to Soils/Rock (Materials) (15%)
 8. Failures due to Environmental Conditions (10%)

Program criteria (curriculum) addressed by this course:

1. Include principles of sustainability in design
 2. Explain basic concepts in project management, business, public policy, and leadership
 3. Analyze issues in professional ethics
 4. Explain the importance of professional licensure
8. Additional topics, assignments, or requirements for dual-level (4000/5000) course:
Graduate students are required to investigate/research and orally present their own comprehensive forensic case study.
9. Date: 01/22/2020