Assignment 3

Due on 2020-02-19, 23:59 IST.

Unit 5 - Week 3

Course outline

The aim of this assignment is to submit the assignment in a peer-reviewed format.

Attachment

- Assignment 5
- Maintenance and Repair of Concrete Structures - (Week 4)
- Feedback Form
- Lecture Material

Task Transcripts

Task 1: Submit complete solutions to the following problems:

1. A beam is 12 m long. It is subjected to a uniformly distributed load of 10 kN/m. Calculate the maximum moment and shear force at the mid-span.

2. A column is 20 m tall. It is subjected to a vertical load of 50 kN. Calculate the column's Euler buckling load.

3. A cantilever beam is 10 m long. It is subjected to a concentrated load of 100 kN at the free end. Calculate the maximum moment and shear force at the support.

Task 2: Submit a report on the following topic:

- The importance of concrete and its applications in modern engineering.
- The role of concrete in sustainable building design.
- The future of concrete technology and its potential applications.

Task 3: Submit a short presentation on the following topic:

- The history of concrete and its evolution over time.
- The current challenges faced by the concrete industry.
- The future trends and innovations in concrete technology.

Task 4: Submit a research paper on the following topic:

- The use of recycled aggregates in concrete.
- The impact of climate change on concrete durability.
- The role of concrete in reducing carbon footprint.

Task 5: Submit a project proposal on the following topic:

- The design and construction of a concrete bridge.
- The development of new concrete materials for sustainable construction.
- The implementation of concrete technology in developing countries.

Task 6: Submit a short case study on the following topic:

- A case study on the successful implementation of concrete technology in a recent project.
- A case study on the challenges faced during the construction of a concrete structure.
- A case study on the impact of concrete technology on the local economy.

Task 7: Submit a short essay on the following topic:

- The role of concrete in shaping the future of architecture.
- The aesthetic and structural benefits of concrete in modern design.
- The role of concrete in the evolution of architectural styles.