

Instrumentation for Civil Engineering Applications

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Product Description

Instrumentation for Civil Engineering Applications

The objective of this course is to understand instrumentation, sensor theory and technology, data acquisition, digital signal processing, life time analysis and decision making. The course introduces theoretical and practical principles of design of sensor systems. Topics include: transducer characteristics for acoustic, current, temperature, pressure, electric, magnetic, gravity, salinity, velocity, heat flow and optical devices; limitations on these devices imposed by building/structure/ pavement environments; signal conditioning and recording, noise, sensitivity and sampling limitations. The contents of the book cover the principles of state-of-the-art systems being used in physical infrastructure/bridges/ buildings/pavements, etc. For laboratory work, the course will allow students to prepare, deploy and analyse observations from standard instruments.

Salient Features:

- The content of the book is aligned with the mapping of Course Outcomes, Program Outcomes and Unit Outcomes.
- In the beginning of each unit learning outcomes are listed to make the students understand what is expected out of him/her after completing that unit.
- Book provides lots of information on sensors, working principle of instrumentations, error analysis and QR codes for further learning
- Figures, tables and photographs are inserted to improve the clarity of the topics
- Questions are given for practice of the students after every chapter
- Solved numerical problems are illustrated in the chapters.

Expectations:

- Learners should recognize the best measurement technique for a physical system

- Learners should identify ways to improve measurement and evaluation
- Learners should build up a life-long learning culture on application of proper instruments for Civil Engineering structures.

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