

Large Scale Assessment in Engineering Courses Using Multiple Approaches

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Modern engineering education programs aims to endow students with a broad base of knowledge, skills, and attitudes necessary to become successful engineers. Assessment is crucial in evaluating a project, product or students' understanding levels. Formative assessment is carried out along the process being assessed for improving teaching and learning.. Effective and efficient formative assessment in large engineering courses is a challenge that requires creative approaches to respond to the course needs. The assessment should be aligned with the course objectives and account for its large-scale. Our session will focus on assessment of large-scale engineering courses from several universities. We will discuss challenges, report on field experiences, and suggest practical, field-tested, technology-utilizing approaches for coping with a variety of assessment types. Approaches include just-in-time assessment of students' misconceptions, peer, comparison-based assessment that utilizes crowdsourcing, and meta-assessment—assessment of how students assessed their peers and the thinking level they attained as evidenced from their assessment. The session attendees will be exposed to thoughtful, effective, and meaningful integration of learning and teaching in undergraduate engineering courses, as well as their assessment. Examples of assessment tools will be presented and distributed.