

## Development of Active Learning Calculus Course for Biomedical Program

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**Abstract :** The paper reviews design and implementation of a Calculus Course required for the Biomedical Competency Based Program developed as a joint project between The University of Texas Rio Grande Valley, and the University of Texas's Institute for Transformational Learning, from the theoretical perspective as presented in scholarly work on active learning, formative assessment, and on-line teaching. Following a four stage curriculum development process (objective, content, delivery, and assessment), and theoretical recommendations that guarantee effectiveness and efficiency of assessment in active learning, we discuss the practical recommendations on how to incorporate a strong formative assessment component to address disciplines's needs, and students's major needs. In design and implementation of this project, we used Constructivism and Stage-by-Stage Development of Mental Actions Theory recommendations.

**Keywords :** active learning, assessment, calculus, cognitive demand, mathematics, stage-by-stage development of mental action theory

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