

1116-E1-1818

**Alina N Duca\*** (anduca@ncsu.edu), **Hatice Ozturk** (hoo@ncsu.edu), **Dianne Raubenheimer** (raubenhe@meredith.edu), **Joel Trussell** (hjt@ncsu.edu) and **Geoff Goehle** (grgoehle@email.wcu.edu). *JITAR online modules to improve math preparation of engineering students*. Preliminary report.

Engineering educators face the challenge of having to teach students with a diverse mathematical skill levels while needing to quickly bring all students up to the same mathematical mastery level at appropriate points during a semester. To address this problem, a team of mathematics and engineering instructors designed a teaching e-tool Just-In-Time Assessment and Review (JITAR). It is delivered as an on-line system consisting of a series of individualized mathematics modules inserted within engineering courses at strategic points in the semester. JITAR assesses the mathematical competency level of the individual student and provides formative individualized learning opportunities in time for the students to be successful in applying the necessary mathematics to the new engineering course material. The open source on-line homework system WeBWorK was chosen for the delivery of these modules. The structure of the modules relies heavily on the fact that the assessment and review content needs to be generated based on individual student's performance. Within WeBWorK a new type of assignment was created to support the desired presentation and flow of the module integrating assessment and e-learning assistance by offering a customized learning path to students. (Received September 21, 2015)