http://www.needs.com

http://www.teachengineering.com/

Pathway for K-Gray Engineering Education

Ed level: K-Gray Discipline: Engineering

A collaboration to provide a comprehensive engineering portal for high-quality teaching and learning resources in engineering, computer science, information technology and engineering technology – the Engineering wing of NSDL. Start date: October 1, 2005.

Project goals are to: 1) merge NEEDS and TeachEngineering into a unified K-Gray engineering educational digital library; 2) significantly grow high quality resources in the NSDL Engineering Pathway in a sustainable way; 3) align the unified curricular materials with appropriate undergraduate (Accreditation Board for Engineering and Technology - ABET criteria) and K-12 educational standards, 4) grow the participation of content providers and users; 5) enhance quality control and review protocols for Engineering Pathway content; and 6) create a nonprofit strategy and partnership for the sustainability.

Partners: University of California-Berkeley: Alice Agogino – PI; Jialong Wu – Technology; Nancy Van House - Evaluation | University of Colorado at Boulder: Jacquelyn Sullivan – PI | Colorado School of Mines: Mike Mooney – PI | Worcester Polytechnic Institute: Martha Cyr – PI, workshops | Virginia Polytechnic Institute: Joseph Tront, PI, workshops, ABET | Oregon State University: Rene Reitsma - Technology | Duke University: Gary Ybarra – PI

Collection size and development: NEEDS: 3000 registered users, 8000+ learning objects, undergrad and K-12. Will map undergrad resources to Accreditation Board for Engineering Technology (ABET) criteria. **TE**: 300+ classroom-tested K-12 curricula and Learning Labs mapped to state math and science standards. Harvest resources from 26 GK-12 awards; gather higher ed and professional society resources.

Web portal: New unified portal in planning, employing a four-element 'activity-centric' interface that will allow access to TE, NEEDS, NEEDS services, and other featured collections/resources, providing discovery tailored to user's purpose. Anticipate October 2006 launch.

Search and browse: Each current site performs search over each repository (union of metadata of both collections)

Special features: NEEDS: personal workspaces, notification/email services, RSS feeds, metathesaurus to suggest related search terms, online cataloging, recommendation system. TE: personal workspaces, value-added Living Labs provide lessons and activities allied with access to real-time data (water engineering, wind engineering, Fastracks - transportation)

Community sign on: Work started on Shibboleth software setup and testing system.

Cataloging/metadata generation/ NSDL MR: NEEDS utilizes own cataloging tool system (available online). **TE** publishes content via an open-source authoring tool template tailored for TE use.

Web 2.0 technologies such as blogging, tagging/bookmarking systems (e.g. del.icio.us); RSS feeds; gaming technologies: NEEDS employs a development blog, and RSS service for new resources.

Evaluation activities: Omniture implemented on NEEDS site. TE drafting rubrics for curriculum evaluation with partners. Interested in learning more about various models of evaluation: especially in publishing models – quality assurance and incentivizing

Outreach activities: Pathways and Annual Meeting participation. TE plans Fall 2006 training workshops for content providers, using TE authoring tool.

Privacy policy posted and accessible: Yes, for both sites.

Unique assets / synergies: Strong partnerships with engineering professional societies, engineering research centers, NSF GK-12 programs, and ABET. NEEDS offers very strong knowledge base and experience in digital library development and service provision. Rigorous K-12 content review and classroom testing processes. TE will test use of Teachers' Domain standards alignment tool; working with Jes&CO and Syracuse (ASN/CAT standards alignment).