

Curriculum Modules for Nuclear Engineering: Corrosion and Radiation Effects on Electronic Materials

Executive Summary

In the major portion of the project, the University of Kansas (KU) will work with Texas Tech University (TT) and the University of Texas at Austin (UTA) to design, implement, assess, and then revise 25 online stand-alone (combinable) 2.5-hour lesson modules on materials corrosion and electronic devices for nuclear engineering applications. In addition, the University Engineering Alliance (UEA) (formerly known as the Big 12 Nuclear Engineering Consortium) will provide crucial oversight and assistance for development of the modules. The proposed modules can be combined in various ways to yield larger learning segments (i.e., day-long short courses to 3-credit hour university courses) and/or incorporated into future courses/short courses. Each learning module will have its own interactive assessment tools to insure that learners have a variety of modes through which to understand the material. Since the format will be a virtual classroom, students can re-visit that material as needed, optimizing student and instructor time. In addition, selected modules will be used by practicing engineers to gain targeted knowledge, and for continuing education credit, available whenever/wherever there is an Internet connection. Once developed, these modules will be straightforward to update and, therefore, will be usable/applicable for many years, as KU, KSU, TT and UTA, continue to teach/manage/update the modules. This methodology is the cornerstone for development of a variety of modules which have nuclear engineering applications and can be used by the UEA.

Principal Investigator: Ronald Dougherty, doughrty@ku.edu