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FOR
ACADEMIC AFFAIRS COMMITTEE

Committee Meeting: 11/18/2020

Board Meeting: 11/19/2020
Austin, Texas

Rad Weaver, Chairman
Christina Melton Crain
R. Steven Hicks
Janiece Longoria
Nolan Perez
Kelcy L. Warren

1. U. T. System Board of Regents: Discussion and appropriate action regarding Consent Agenda items, if any, assigned for Committee consideration

RECOMMENDATION

The proposed Consent Agenda items assigned to this Committee are Items 9 - 25.

2. U. T. Rio Grande Valley: Approval of preliminary authority for a Doctor of Philosophy in Materials Science and Engineering degree program

RECOMMENDATION

The Chancellor concurs in the recommendation of the Executive Vice Chancellor for Academic Affairs and the institutional president that the U. T. System Board of Regents approve

a. preliminary authority for U. T. Rio Grande Valley to create a Doctor of Philosophy in Materials Science and Engineering degree program; and

b. notification of the proposal to the Texas Higher Education Coordinating Board.

BACKGROUND INFORMATION

U. T. Rio Grande Valley requests approval for planning authority to begin preparing for the establishment of a Doctor of Philosophy (Ph.D.) in Materials Science and Engineering. The materials science, engineering, and technology disciplines have experienced rapid growth over the past two decades. The field of materials science, commonly termed materials science and engineering, involves the discovery and design of new materials with an emphasis on crystalline and amorphous solids and liquids. Materials science deals with the structural analysis of materials, the discovery of new material substances and physical phenomena, their application in various industries, and the relationships between properties of materials and their mechanical structure at the atomic level. Thus, the intellectual origins of materials science combine the analytical thinking from chemistry, physics, and engineering to understand phenomenological and statistical observations in metallurgy, crystallography, and mineralogy. Recent developments in materials science and engineering have contributed notably to advanced nanostructured materials development and have motivated further educational expansions for the development of smart, responsive, and “intelligent” materials. These trends identify many desirable changes in the present science and engineering curricula with emphasis on materials science and engineering. A critical need exists now to supplement the traditional disciplinary training with an interdisciplinary nanoscience curriculum to address the needs of both emerging materials science enterprises and rapidly forming nano- and micro-scale industries.

U. T. Rio Grande Valley's College of Sciences and College of Engineering and Computer Science look to fill this critical gap in the curriculum by creating a new multidisciplinary doctoral program in materials science and engineering. This program seeks to provide graduates with broad experience in materials science and engineering based on a foundation in one of the traditional disciplines of chemistry, biology, geology, mathematics, physics, or engineering, through original investigation in a specialized area.

The job outlook for graduates of a Ph.D. program in this discipline now and in the foreseeable future is favorable. According to the U.S. Bureau of Labor Statistics (BLS), employment for materials scientists is expected to increase by 7%, faster than the average for all occupations (4%). The BLS asserts that chemists and materials scientists who have an advanced degree, particularly a Ph.D., and work experience will have the best opportunities.

Twenty-two faculty from across the two Colleges will contribute to the doctoral program. The research productivity of the faculty compares favorably to that of peers nationally.

Once preliminary authority has been approved, U. T. Rio Grande Valley will prepare and submit the full degree program proposal for approval to the U. T. System Board of Regents and the Texas Higher Education Coordinating Board.