Contact: Diana Gonzalez

REQUEST FOR A NEW PROGRAM AT IOWA STATE UNIVERSITY: MASTER OF ENGINEERING PROGRAM IN MATERIALS SCIENCE AND ENGINEERING

Action Requested: Consider approval of the request by Iowa State University to establish a new Master of Engineering Program in Materials Science and Engineering which will be administered by the Department of Materials Science and Engineering in the College of Engineering.

Executive Summary: The proposed program will provide an option for students who seek advanced study in materials science and engineering but are not interested in conducting the research required for the Master of Science Program in Materials Science and Engineering. This proposal was reviewed by the Board Office and the Council of Provosts and is recommended for approval. No concerns were raised when it was presented to the Iowa Coordinating Council for Post-High School Education. The proposed program addresses the Board of Regents Strategic Plan priority (1.0) to "ensure high-quality educational opportunities for students."

Background:

- Description of proposed program. The proposed program is a coursework only version of the Master of Science Program in Materials Science and Engineering offered by the department. It will offer students a more detailed understanding of materials properties, processing, theory, and characterization through an all coursework approach. The proposed program will require completion of 30 credits of graduate work without a thesis.

- Relationship to existing programs. Currently, the department offers a Master of Science Program in Materials Science and Engineering which offers advanced studies in many areas of materials science and engineering, including the design and control of materials for structural, electronic, photonic, magnetic, optical, and biological functionality. This program requires completion of 32 credits of graduate work, including preparation of a thesis or creative component.

- Duplication. There are no other institutions of higher education in Iowa that offer a Master of Engineering Program in Materials Science and Engineering.

- Student demand. Students, particularly those who are employed, have repeatedly requested a non-thesis option because of the difficulty they experience in trying to complete the research required for the thesis.

- Projected enrollment. The projected enrollment is three students in Year 1, increasing to eight students per year by Year 7. The courses for the proposed program will be offered on-campus with a distance education component if needed by off-campus students.

- Unique features. ISU is a national leader in the area of materials science and engineering as evidenced by the program's consistent national ranking in the top 25 graduate programs.[1] The proposed program will build on existing strengths and will be competitive with peer institutions that offer a similar program.

[1] 2009 *U.S. News and World Report*.

- Need for proposed program. "Materials engineers are expected to have employment growth of 4% over the previous decade, slower than the average for all occupations. Although employment is expected to decline in many of the manufacturing industries in which materials engineers are concentrated, growth should be strong for materials engineers working on nanomaterials and biomaterials. As manufacturing firms contract for their materials engineering needs, employment growth is expected in professional, scientific, and technical services industries also."[2]

- Resources. The University anticipates that no new resources will be needed to establish the proposed program. The proposed program will use existing courses, faculty, and facilities for graduate education in materials science.

- Cost. The University anticipates that the proposed program will not incur new costs.

- Link to institutional strategic plan. The proposed program addresses ISU's Strategic Plan priority "to strengthen undergraduate, graduate, and professional education to enhance student success at ISU and beyond."

[2] U.S. Bureau of Labor Statistics projection for the decade 2006-2016.