WASHINGTON
HIGHER
EDUCATION
COORDINATING BOARD

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Electrical Engineering Degree Program Proposals

Supplemental Requirements for Proposals by a Comprehensive College or University

BACKGROUND

On April 21, 2003, Governor Gary Locke signed into law Engrossed House Bill 1808, allowing Washington's public comprehensive universities to establish electrical engineering degree programs upon approval by the Higher Education Coordinating Board (HECB). Prior to passage of this legislation, electrical engineering degree programs were restricted to the state's two research institutions, the University of Washington and Washington State University.

Before signing EHB 1808, the Governor vetoed Section 2 of the legislation, which directed the HECB to conduct an independent analysis using information from a variety of sources, not just limited to information submitted by the institution making the proposal. Information used by the HECB was to include:

- Detailed evidence of why the new program is justified, including the size and scope of student, employer, and community demand for the program;
- The feasibility of using existing public and private capacity for the program and comparisons of the state cost of providing existing and proposed capacity;
- Projected future enrollment and substantiation of estimates; and
- Other information requested by the HECB regarding demand, need, and cost-effectiveness of the program.

In his veto message, the Governor encouraged the HECB to follow the criteria outlined in Section 2 of EHB 1808. In light of the Governor's comment and the Legislature's clear intent to establish stringent review standards for new degree proposals under this law, the HECB will follow the criteria outlined in Section 2, and has established the following guidelines for preparing and evaluating electrical engineering degree program proposals.

I. SPONSORING INSTITUTION'S RESPONSIBILITIES FOR PREPARING PROPOSAL

In preparing proposals for electrical engineering programs, comprehensive colleges or universities must address the standard elements required in the HECB's *Guidelines for Program Planning, Approval, and Review,* and the guidelines in Sections A, B and C below.

Standard proposal elements in the HECB's Guidelines:

- Program need (relationship to role and mission, documentation of need for the program, relationship to other institutions)
- Program description (goals, objectives, student learning outcomes; curriculum; use of technology; faculty resources; enrollments and time-to-degree; diversity plan; administration)
- Program assessment (assessment plans for program effectiveness and student learning outcomes)
- Finances (program costs and sources of funding)
- External evaluation of proposal (external expert reviewers and other Washington public four-year institutions)

Additional proposal elements:

A. Background Information

- Describe the program accreditation requirements that are based on the national accreditation standards established by the Accrediting Board for Engineering and Technology.
- Identify occupations that typically require an undergraduate degree in electrical engineering. The Bureau of Labor Statistics is one source for gathering this information.
- Identify the community colleges whose graduates will be recruited or are expected to enroll in the proposed program.

B. Employer Demand and Community Need

- Document employment demand in the state for the proposed program in terms of workforce needs of program graduates during the last 5-10 years and in terms of projected workforce needs of program graduates during the next 5-10 years.
- Document demand in the state for the proposed program in terms of economic development.
- Compare electrical engineers' salaries in the state with those in other regions of the country as one indicator of relative supply and demand.

C. Program Costs and Revenue

In addition to the information required in the HECB's Guidelines for Program Planning, Approval, and Review, relating to Program Faculty (Table 1), Size of Program (Table 2), Administrative/Support Staff (Table 3), and Summary of Program Costs (Table 4), for the proposed program identify the:

- Facilities/capital costs
- Non-recurring operating budget start-up costs by area of expense

II. HIGHER EDUCATION COORDINATING BOARD'S RESONSIBILITES IN EVALUATING AN ELECTRICAL ENGINEERING PROPOSAL

The Governor and the Legislature expect that the HECB, in considering electrical engineering degree program proposals by comprehensive colleges or universities, will evaluate all of the elements of a standard new degree program and the specific elements cited above. In addition, the HECB will collect the information described in Sections A through E below from a variety of sources, and conduct an independent analysis.

A. Students

- For fall 2003, and for at least the previous 5 and up to10 years, identify the total number of in-state resident, domestic nonresident, and foreign community college transfer, other transfer, and first time students who have enrolled in and graduated from an undergraduate electrical engineering program at the University of Washington, Washington State University, Seattle Pacific University, Seattle University, Gonzaga University, Walla Walla College, or Henry Cogswell College. ***(Data compiled by four-year institutions)***
- Identify the total number of in-state resident, domestic nonresident, and foreign students currently enrolled in each community college who are taking the pre-requisite set of courses (e.g., mathematics, physics, chemistry.) ***(Data compiled by SBCTC)***
- For the past two years, identify the total number of Associate of Science-Transfer, Track 2 (engineering and physics) graduates from each community college. ***(Data compiled by SBCTC)***
- If the institution's undergraduate electrical engineering program has exclusive admission requirements for its program, for at least the previous 5 and up to 10 years, identify the total number of in-state resident, domestic nonresident, and foreign community college transfer, other transfer, and first-time students who: ***(Data compiled by four-year institutions)***
    - were eligible but not accepted in each undergraduate electrical engineering program offered by a Washington public or private institution
    - were accepted in each undergraduate electrical engineering program offered by a Washington public or private institution.

B. Supply and Demand

- Compare the number of individuals working in electrical engineering related occupations in Washington with the number of individuals who graduated from each undergraduate electrical engineering program offered by a Washington public or private institution. ***(Data compiled by HECB)***
- For 2003 and for at least the previous 5 and up to10 years, identify the number of non-US citizens working in electrical engineering related occupations in Washington on H-1B and other federal employment visas. ***(Data compiled by HECB)***

C. Program Costs

For each existing electrical engineering degree program offered by a Washington public or private institution identify: ***(Data compiled by four-year institutions)***

- Annual average program costs per undergraduate student FTE (by fund source for public institutions)
- Faculty FTE/Student FTE Ratio

D. Program Capacity

For each undergraduate electrical engineering program offered by a Washington public or private institution identify: ***(Data compiled by four-year institutions)***

- Current capacity available, given current resources, in terms of how many more FTE students the program could serve.
- Factors limiting capacity (e.g., physical, staffing, other).
- Non-recurring operating costs for start-up or expansion.
- Plans to expand existing programs or restrictions preventing expansion; capital and operating costs associated with expansion, and costs to the state of expanding existing programs.