2021-2023 Biennium Internal Budget Proposal Narrative
Division: Engineering and Design

Evaluation Criteria: Proposals will be evaluated on every aspect of this template. It is highly recommended that the narrative portion touch on each area. Proposals forwarded to UPRC by unit leaders will be discussed at UPRC and authors are encouraged to attend so that they may answer questions and provide clarification.

Electrical and Computer Engineering Expansion

☐ This is a revised version of a previously submitted budget proposal.
If box is checked please briefly outline any significant changes and/or indicate why it is being resubmitted.

Statement of Purpose: *(What is the challenge or opportunity being addressed? How does the proposal address this challenge or opportunity? Limit response to 1 page – please link to any existing reports, data, supplemental materials, etc.)*

This proposal funds **two faculty and one staff position** to establish a graduate program by the opening of the new building, which is currently scheduled for January 2024, and enable an enrollment capacity increase from 48 to 60 students per class year. This proposal is the first part of Phase 3 of the expansion plan for Electrical and Computer Engineering, as is explained in more detail below.

This is part of an ongoing ten-year plan comprised of three phases that significantly expands Western's Electrical and Computer Engineering (EECE) program to respond to state needs and student demand. Once complete, the expansion will result in a threefold increase in students admitted to the major, the addition of a graduate program, and the transition into an electrical and computer engineering department with dual accreditation. The first two phases of this expansion have been made possible by two decision packages (2013-15 and 2019-21) and industry support. Phase 1 is completed, and Phase 2 is currently underway with an ongoing search for two TT faculty positions, while searches for one TT faculty position and one technician position are on hold because of COVID-19 budgetary concerns.

Phase 3 will be done in two parts: Phase 3a proposes to begin a graduate program, and Phase 3b, is a decision package to be submitted for the 2023-25 biennium to complete the expansion of the undergraduate capacity and transition the program to an EECE department.

In support of the third phase, a significant capital investment has been made by the state and industry partners for a new building. Design has started on the building with 25,000asf of space for the expanded EECE department. This building is shared with the CSCI department and includes the following project goals:

- *Accommodate expanded growth…*
- *Increase access for more students, particularly for historically underserved populations.*
- *Create a welcoming environment for industry, and opportunities to bring industry partners onto campus to enhance university-industry interactions.*

The building space is designed for 16 EECE faculty offices and a capacity of 90 EECE undergraduate and graduate students per year along with a departmental office suite.

Anticipated Outcome(s):

1. Establishing the foundation for a new graduate program.
2. Accommodating expanded growth
3. Increasing access for more students, particularly for historically underserved populations.
4. Continuing to expand curriculum into areas with high-demand enrollment that meet the needs of the state.

Metrics: *(How will outcomes be measured? Please include current data points and goals. If this proposal will have any impact on the Overall Metrics included in the university's strategic plan, please indicate which specific ones here.)*

1. A new graduate program is designed, included in the course catalog, and accepting students.
2. Enrollment records. Current capacity is 48 undergraduate students per year. Expand to 60 undergraduate/graduate students per year.
3. Based on university's data warehouse query during the last four years that we accepted 24 students the percentage of women was 4.12%. Since we started increasing capacity, the last three years, the percentage is 13.45%. There has been a similar improvement for underserved minority students accepted. We believe this trend will continue when we accept more students into the program. We will continue to use the data warehouse query to monitor the numbers.
4. Concentrations and/or alternate paths to the major will be established in the course catalog.

How does this proposal align with your departmental/divisional strategic priorities? *(Please reference specific items from the recently completed departmental/divisional strategic plan and attach a copy.)*

This proposal aligns with four of the strategic goals of the College of Science and Engineering.

1. Access. The primary purpose for this investment is to increase access to: *Balance capacity with student demand to ensure program sustainability and quality*. It will enable an enrollment capacity increase from 48 to 60 students per class year.
2. Meeting Needs. This proposal directly addresses: *Develop programs meeting the needs of our students and the state*. In the last two years we have turned away 48% of applicants to the major. See below for meeting state needs.
3. Research. By establishing the first engineering graduate program at Western, this proposal addresses: *Strengthen the scholarly culture*.
4. Diversity. As part of the outcomes in this proposal we will expand and enhance our work to: *Nurture a supportive and inclusive environment and culture*. The work and success we have been having in this area will be expanded. This includes our work on the BEES program, major and pre-major orientations, focus groups in collaboration with the EOO office, and DEI hiring qualifications starting as part of the Provost's Diversity and Inclusion Hiring Initiative and continuing since, for this, the EOO has cited us as an example.

How does this proposal support the University Mission and Strategic Objectives? *(Please refer to the 2018-2025 Strategic Plan and indicate which core theme(s) this proposal will help achieve.)*

The primary purpose for the ongoing expansion of the EECE program has been to meet the needs of the state by providing access. One of Western's most important strategic goals is to provide well-prepared graduates to the Washington State workforce. In addition, the expansion will be targeting additional strategic goals such as advancing inclusive success and enhancing academic excellence.

Core Themes

Advancing Inclusive Success
As described in Metrics (#3) above, we have seen significant improvement in access for underrepresented groups and expect that to continue. The work and success we have been having with advancing inclusive success will be expanded. This includes our work described above in the college strategic goal #4 Diversity, which has a direct effect on: *increase retention and persistence rates and the number of graduates, while eliminating achievement gaps for students from diverse and under-represented socio-economic backgrounds*.

Increasing Washington Impact
Expansion of the Electrical and Computer Engineering program responds to the Washington Student Achievement Council's *Roadmap Report* and supports the Governor's *Results Washington* by increasing STEM and high-demand enrollments in four-year colleges and preparing graduates to tackle the challenges of energy, environment, and transportation sustainability. This proposal directly address access and it *prepare our students to be successful in a continuously changing work and social environment, where technology and automation are driving employment trends, and significantly changing the nature of work and relationships*

Enhancing Academic Excellence
A new graduate program directly addresses: *...based on innovative scholarship, research and creative activity to foster the development of engaged members of a global community*. While it is also a direct example of *requires investing in, and nurturing, a faculty culture that integrates knowledge and exploration in our undergraduate and graduate programs. We will continue to enhance the high quality of our undergraduate and graduate programs in the liberal arts and professional programs, while simultaneously extending our reach to become a greater catalyst for regional economic and social development*.

What are the consequences of not funding this proposal?

After significant investment in Phase 1 and Phase 2 and the building, the priority for Phase 3 has already been established. Not funding this proposal will delay the creation of the graduate program and prevent expanded student access for at least two years.

What alternatives were explored?

All of Phase 3 of this expansion was included in the 2023-25 decision package pre-proposal so the priority has already been established. This is a formal recognition that we are still turning away students to the undergraduate program and not offering students the opportunity to attain sought after graduate degrees in Electrical and Computer Engineering. There is no need to wait for the decision package to allow more students access to the programs.

Which units (departments, colleges, etc.) will be involved?

This will involve the College of Science and Engineering and the current Department of Engineering and Design.

Equipment needed:

No equipment needed beyond that purchased through faculty startup funds and normal workstations.

For major (>$25k) purchases, please provide the following information.

Item:

N/A

Purpose:

N/A

Cost:

N/A

Anticipated Useful Life:

N/A

Replacement Cost if any:

N/A

Human Resources *(Complete the table below adding additional rows if necessary)***:**

Position Title	*Total Headcount*	*Total FTE*	*Salary and Benefits per FTE*	*Total Cost*
TT Faculty (FY23)	*2*	*2*	*$124,155*	*$248,310*
Staff (Program Manager)	*1*	*1*	*$84,050*	*$84,050*

Table above should match data on budget spreadsheets submitted with this proposal. Complete the spreadsheet to get salary, benefit, and total cost amounts. Contact your division budget officer with questions.

Operating & Maintenance Costs (include service contracts, installation costs, etc.):

$5,500 in operating costs.

Space Requirements:

What type of space is needed for this proposal? (e.g., private office, lab space, group work/study space, etc.)

Space will be provided at the opening of the new building.

What features must this space have? (e.g., fume hoods, plumbing, 3-phase power, etc.)

This is part of the ongoing building design work.

What needs can be accommodated within your existing space?

This proposal presumes the completion of the aforementioned new building.

How much new space will be required?

The new building is being designed to accommodate an EECE graduate program.