

## **Program Performance Review: Culmination Meeting Memo Computer Science MS**

The 2021-2022 Program Performance Review (PPR) process for the Computer Science MS program in the College of Engineering and Computer Science (ECS) concluded with a culmination meeting on December 15, 2022.

The following people attended the meeting: Carolyn Thomas (Provost), Elaine Frey (AVP for Graduate Studies, AVPGS), Susan Barua (Dean, ECS), Sang June Oh (Associate Dean, ECS), Chang-Hyun Jo (Department Chair), Bin Cong (Program Coordinator), Kevin Wortman (Faculty), and Su Swarat (Senior AVP for Institutional Effectiveness and Planning, SAVPIEP).

The Provost congratulated the program for successfully completing the PPR process, and thanked the department for participating in thoughtful reflection and continuous improvement. The Provost commended the program for its excellent performance. The following specific accomplishments were highlighted during the PPR process:

- The program has experienced a significant increase in demand and enrollment.
- The diverse student body is a result of the program's efforts to provide a pathway for non-CS undergraduates. The Provost commended the faculty for spending the extra effort to infuse flexibility into the curriculum.
- The program is committed to student success through a well-defined, rigorous, and robust curriculum that is well-aligned with the mission and goals of the university and the program. New courses are added and existing courses are actively updated to ensure they are technologically relevant. The Provost commented that this program models best practice where faculty proactively discuss and accommodate learning and teaching needs.
- The program takes a progressive and evidence-based approach in developing a strong and consistent culture of assessment.
- Faculty are involved in research, with many successfully securing grants. Several faculty members are actively involved in the ECS Center for Cybersecurity, which engages in collaborative research with faculty members across the colleges.
- Hiring new tenure-track faculty has contributed to the active development and addition of relevant courses to the program's curriculum. New faculty are sought to continue to meet the programs' increasing needs. The Dean reported that two hires are taking place right now, and more are needed due to the high enrollment demand.
- The program's chair, graduate adviser, and other faculty provide support and attention to students. The program's requirement for students to consult with their graduate adviser in developing a study plan ensures they take courses that align with their career goals.
- The data center is well-maintained to support students in conducting network experiments and starting up servers.

Major recommendations and issues raised through the PPR process were discussed as follows:

### **1. Program enrollment**

- The AVPGS commented that the program's enrollment growth helps the university meet enrollment target. She encourages the department to explore ways to showcase Computer Science as a "premier department" where the department's excellent performance could be used to attract more students.

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- The Program Coordinator stated that the program can support 240 students concurrently. The challenge against growth is faculty capacity – graduate courses must be taught by full-time faculty or part-time faculty with PhD. The competition for part-time faculty in the region is high.
- The Chair added that the department would love to grow, but faculty capacity and space (classroom and lab) constraints limit program growth. Expanding through online modality is not practical for the program due to the international student requirements for in-person instruction.
- The Dean stated that Computer Science as a discipline goes through cyclical enrollment trend in the long term, so the enrollment growth may not be continuous. The program needs to prepare for possible enrollment decline in the future, and thus cannot adopt a “simple growth” mentality.
- The Program Coordinator reported that the program prioritizes students who have met the prerequisites. Students who do not meet the prerequisites are often recommended to complete them elsewhere as a way to balance enrollment and capacity. The program is considering developing a pre-program or a certificate program to help students meet prerequisites.

### **2. Class size**

- The Program Coordinator brought up the desire to have more control of graduate classes. The faculty voiced the concern that big class size could negatively impact instructional quality.
- The Associate Dean commented that the typical class size for ECS is 25-30 for graduate classes, and 40-45 for undergraduate classes. However, the high demand for the program often requires going beyond the typical class size.
- The Dean stated that the college is aware of the class size challenge, and is actively seeking solutions to support faculty in this regard.
- The Provost encouraged all relevant stakeholders to work together to develop realistic, shared expectations, and reach consensus regarding class size between the college, department, program, faculty, and students.

### **3. Thesis option**

- The external reviewers recommended the program to add an additional semester to the thesis sequence.
- The AVPGS disagreed with the external reviewer’s recommendation because the program may not be able to meet student demands if all choose the thesis option.
- The Program Coordinator agreed, and emphasized that project is the more appropriate approach given faculty capacity constraints. The faculty concurred and added that the program is a gateway to jobs, not PhD programs. The number of students who choose the thesis option is small (1-2 per year).
- The Chair stated that students are able to work on thesis-quality research through the project option.

### **4. Assessment**

- The external reviewers recommended that Student Outcomes (SO) and Performance Indicators (PI) mapping should be revised to ensure that every possible choice of required

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electives is mapped to the SOs and PIs; the revision should be done for both project and thesis options.

- The SAVPIEP reported that the program is working with OIEP through in-depth review to improve assessment practices, both in terms of direct and indirect assessment approaches. The office is committed to support the program in improving performance outcome assessment in addition to student learning outcome assessment.

### **5. Student support**

- The Program Coordinator reported that there is a need for better student support (e.g. mental health, sense of belonging) through the program's indirect assessment findings. This is particularly problematic for the international students in the program.
- The Provost stated that EIP is exploring ways to improve international student support campus wide.
- The Dean commented that having a college international advisor is very helpful. The previous incumbent left, so the college is currently searching for a replacement.

### **6. Space for part-time faculty and students**

- The Chair brought up the need to have office or lounge space for students and part-time faculty where they can stay, meet, and work while on campus.
- The Dean stated that there used to be space provided for ECS part-time faculty prior to COVID, but not anymore. As a result, part-time faculty have to provide office hour virtually.
- The faculty added that students need space on campus to study and work together as their living conditions do not allow students to do so at home.
- The Provost recommended the college to explore the "hoteling" option to maximize space capacity.

The Dean summarized the program as a proactive program that always seeks new directions to innovate the curriculum. She commended the Chair and the Program Coordinator for being great advocates for the department and the students, and thanked the faculty for doing their best to accommodate student needs. The Provost concluded the meeting by thanking the college and department leadership, and the faculty and staff for their dedication and hard work.