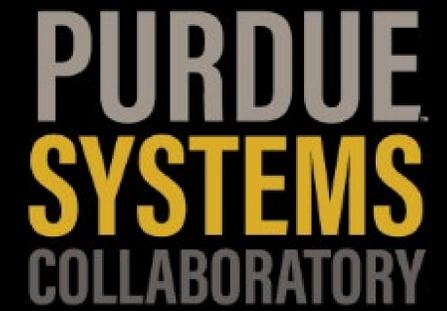


Planning for Growth: A Systems Problem

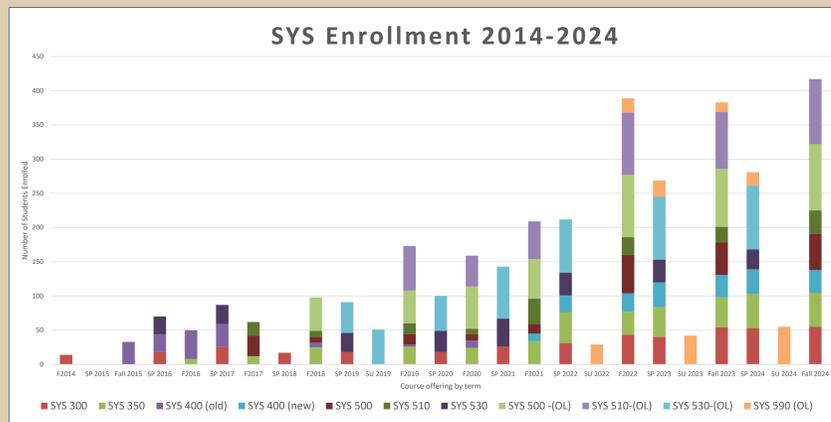


Problem Statement:
Growth is good... now what?

The Purdue Systems Collaboratory has been in development and growing for 10 years now. Over the past 5 years, enrollment has grown, as have the number of students enrolled in the Certificate programs. Beginning in 2022, courses and sections have been added, enrollment caps have been raised, and now, the PSC is at capacity in regard to course enrollment.

How can PSC continue to grow and manage the interest and demand going into future semesters? We need a plan.

The Growth of the Purdue Systems Collaboratory over 10 years



Purdue Systems Collaboratory offers 2 Certificate Programs and 7 Courses

Undergraduate Courses

- SYS 300 Addressing Global Challenges
- SYS 350 Systems Methods
- SYS 400 Systems Praxis

Graduate Courses

- SYS 500 Perspectives on Systems
- SYS 510 Tools and Methodologies for Designing Systems
- SYS 530 Practical Systems Thinking
- SYS 590 Systems Engineering Processes and Professional Competencies (INCOSE Course)



In AY 2022-2023 SYS offerings were increased to offer the three undergraduate courses both Spring and Fall terms
In Summer 2022 PSC launched SYS 590 Systems Engineering Processes and Professional Competencies (INCOSE Course)

Additional Demand and Potential Growth Opportunities

MSE – Masters in Systems Engineering – Launched Spring 2025

Demand is high and growing for the Undergraduate courses.

Adding additional Graduate sections of current SYS courses - SYS 500 is currently scheduled for Fall 2025 and Fall 2026.

This course is the priority to try to increase capacity. PSC is in the planning phase of creating a standalone ASNYC course, in addition to the option of offering the standard course, both on campus and online in the Spring at some point. Adding additional graduate capacity is currently a priority.

Engage Purdue Indianapolis students – There had been a Systems Certificate unique to the Indianapolis campus previously, it has been discontinued. We need to evaluate the interest and demand for Systems offerings in Indianapolis and incorporate those results into our future plans.

Adding Online Undergraduate Course(s) Possibly offered in the Summer terms

Methods - Measuring Interest and Awareness

Three semesters of student request data were reviewed -Spring 2024, Fall 2024, and Spring 2025. The requests for the SYS Undergraduate courses far outpaced the capacity and resulted in long wait-lists. The Graduate courses had wait-lists as well, but were not as significant.

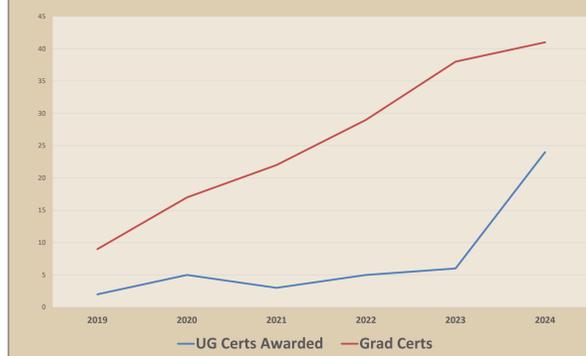
Working with the PSC faculty and additional stakeholders, we have been discussing what future growth of the PSC might look like over the past 18 months. One of the goals of this project is to be able to provide the next PSC Director with data about the past, present and possible futures of the Systems Collaboratory.

Requests During Pre-Registration vs Enrollment Capacity Spring 2024, Fall 2024, and Spring 2025



Certificate Program Growth

Systems Certificates Awarded 2019-2024



Graduate Applications for Systems Certificate 2019-2024



Potential Solutions

Implement Immediately

- Increase enrollment cap of SYS 300 and SYS 350 for Spring 2025 (Enrollment cap raised to 60 students for both courses) TAs added.
- PSC Director search is underway

Short Term Planning

- Additional SYS 500 course ASYNC section only
In Discussion with Purdue Online - Possible Spring 2026 on-campus and online with a Summer 2026 ASYNC section only. Add other graduate level courses in succession.

Long Term Planning

- Additional SYS 400 course offering –online section in planning phase
Plan to add online options during summer terms for SYS 300 and SYS 350
In discussion and planning

Tackling Complex Challenges to Move the World Forward.

The global society in which we live is often faced with large-scale, pressing challenges that can only be solved through interdisciplinary research. The Purdue Systems Collaboratory is eager to equip the next generation of systems thinkers with the tools and approaches for tackling the world's complex challenges – to move our world... *forward*.

Purdue Systems Collaboratory (PSC) was formed in 2015 to facilitate broad, transdisciplinary investigations of systems, their interactions with other diverse and assumed unrelated systems, and the aftereffects of major system disruptions. PSC contributes foundational 'Systems-Thinking' principles to education, research, and practice through value-added collaborative models. Through PSC, Purdue is taking a holistic perspective in addressing the human factor of systems, because understanding this, is essential for addressing global as well as local issues. What's most important about PSC is that it drives home the concept of the convergence of knowledge – across the physical sciences, social sciences, arts, life sciences – which sets us apart from other universities.



Top 10 skills on the rise

1. Creative thinking
2. Analytical thinking
3. Technological literacy
4. Curiosity and lifelong learning
5. Resilience, flexibility and agility
6. Systems thinking
7. AI and big data
8. Motivation and self-awareness
9. Talent management
10. Service orientation and customer service

Type of skill
Cognitive skills, Self-efficacy, Management skills, Technology skills, Working with others, Engagement skills

Note: The skills judged to be increasing in importance most rapidly between 2023 and 2027.

The World Economic Forum lists Systems Thinking as a top 10 skill on the rise in importance over the next 5 years. <https://www.weforum.org/stories/2023/05/future-of-jobs-2023-skills/>