Culminating Project: Pulling it all Together

Developing a course-specific strategic approach to learning from instruction and achieving in Princeton STEM+ courses is crucial if students are to be not only effective, but purposeful and efficient, learners. This final task prompts you to pull together what you have learned in order to create a course-specific how-to guide or users' manual for your target course. We expect that you will draw extensively upon the assignments you have done thus far and mainly focus on integrating them into a coherent, refined whole and so this task should not require more than two hours, and perhaps less.

This culminating project prompts you to articulate a strategic approach to learning in a course of your choice. In so doing, this task provides you with an opportunity to engage in the intentional process of strategizing that we have been working towards during this training. In short, the culminating project asks you to answer the central question of this training course:

The Central Question: "How do I develop a course-specific strategic approach to purposeful, efficient, deep engagement and learning so I can solve novel, complex problems on exams and achieve my goals?"

As a reminder, the syllabus states:

Culminating Project

To engage effectively in any course, including this one, it's useful for students to have a clear understanding of the end-point or destination (a course is a pathway to a destination). The end point of this course is a two-part culminating project in which you synthesize what you've learned into your own how-to guide for a course of your choosing you will take in the fall. Each week you will do small assignments collaboratively and individually which build toward your culminating project [Assignment description given later.]. These are the two parts:

1. You will systematically reflect upon a previous STEM+ course to determine how to optimally engage with instruction, learn effectively, and succeed on exams and the course generally. Creating this "users guide" to the course will help you with the second part of the project.
2. You will systematically plan a comprehensive strategic approach to engaging, learning, studying and preparing for exams in a STEM+ course you plan to take in the Fall. The cohort will collect and exchange these documents so that we all benefit from each others' insights.

These past five weeks we have guided you through a stepwise process of developing a strategic approach to STEM+ courses. By reflecting on a prior course and thinking about how, with your new knowledge about learning and your understanding of course demands, you would approach the various components of the course differently (readings, lectures, precepts, p-sets, studying, exam prep, etc.), you have <u>retrospectively</u> engaged in the course-strategizing method, the learning of which is our primary objective. Simultaneously, you have been looking ahead to a fall focal course and, given the somewhat limited information you can access without actually

being in the course, you have also been prospectively practicing this method of course-strategizing on that course.

Our primary objective in this training course, as the central question indicates, is that you learn a method for developing on your own course-specific approaches to learning, studying and exam prep that you can apply skillfully to any and all of your future courses. This final, culminating project provides you with an opportunity to pull what you've learned and done up to now into a coherent and comprehensive description of your particular strategic approach. Our emphasis is on enhancing your skillfulness in this process and less on the product (description) itself; but creating the description not only prompts you to engage the process fully, but also provides us as instructors with a sense of what you have learned. Additionally, these descriptions of course-specific approaches will be shared among the group so all can benefit.

Your descriptions of your strategic approach to these courses should include a rationale--an explanation of your reasons for choosing these strategies—of techniques and tools individually and as a coordinated set. Tell us (including your fellow students), why a particular strategy, technique or tool is likely to be effective given the design and demands of the course. Explain how these methods work together as an effective, efficient, coherent set, that is an 'approach'.

A strategic approach is not a 'plan' per se, though it may share some features. We are not asking what day and time you will read the textbook or go to office hours, but rather HOW you will engage in these and other components of the course and in self-directed study, and WHY you think these ways of doing so will lead to the outcomes you are seeking (e.g. deep durable knowledge, skillfulness in solving complex problem, high levels of achievement, etc.).

Feel free to collaborate with others on this project, but keep in mind that engaging in the process of evaluating various strategies, thinking through decisions and constructing a coherent set of methods is crucial to your learning and your ability to transfer what you have learned from this academy to future courses. Like watching another person solve a complex problem and copying down the solution, adopting someone else's approach has limited value.