

Summary of SERG discussions on an integrated introductory science course:

The purpose of this ongoing discussion is to ascertain the feasibility of, and eventually work toward offering an integrated science course for first year undergraduate students. Our current curriculum for STEM students is highly structured, but takes place independently within the separate disciplines. This codifies the “silo” mentality in our students’ perspectives and causes problems particularly at the intersections of our disciplines. An integrated curriculum would allow us to work together to instill a holistic view of the sciences as perspectives on the same theme rather than completely different fields. In addition, it allows each of us to capitalize on our own expertise rather than re-teaching material from another field in a different way than it might have been previously taught to students in another course. Ideally, this course would be available to all students majoring in a STEM discipline. A completely integrated science course would include foundational concepts from physics, biology, chemistry, and mathematics such that students would have completed the material found in our current introductory courses for each subject at the end of the integrated curriculum. The list below presents comments, concerns, and items that have been discussed during the Fall 2018 SERG meetings to date.

- Implementation/initial course roll out
 - If we put together a pilot group, should this be with high-performing students or a cross-section of our student population? High performing students would be less likely to be affected by the hiccups associated with the initial rollout, but a cross-section would give us more realistic feedback and assessment opportunities.
 - How many credit hours would the course be? This matters for registration and for faculty load
 - How would grading take place (grade for Chemistry, Biology, Math, or a single grade for the whole course)
 - Would the initial course be 2 semesters or 4 semesters? (see below)
- Registration and administrative issues (primary focus of discussions so far)
 - What happens to students who don’t pass in a given semester?
 - What happens with transfer students?
 - How do we list courses so that graduate programs know our students have met their curricular requirements?
- Curriculum (general discussion, but no specifics yet)
 - If we build a two-semester sequence, it would likely include general chemistry, first-year biology, precalculus, statistics, and would not include physics
 - Four semester sequence would include the above along with physics, organic chemistry, and second-year biology
 - Order of instructional topics and integration within the classroom has not been discussed
 - Integrated laboratory component has not been discussed