Guidelines for Syllabus and Course Design

The guidelines listed below are in alignment with research in learning sciences.

Syllabus Features that Support Learning

• **Spiral back to earlier content in assignments;** having students practice this retrieval solidifies learning.
• **Test/quiz content multiple times throughout the course of the semester;** again this retrieval solidifies learning.
• **Add steps to assignments that involve higher-order cognitive levels;** e.g., require students to evaluate their solutions in comparison to others’. This deliberate practice consolidates the related concepts in students’ minds.

Course Design Features that Support Learning

• **Require students to think about a topic before instructor presentation.** This creates a “need-to-know” that prepares students to be more attentive to key points.
• **Have students explain or justify their answers or solutions to others.** This deliberate practice consolidates the related concepts in students’ minds.
• **Test students frequently on material from throughout the course,** with low-stakes quizzes, polling questions, or reflection activities. Students learn better from being tested than from re-reading or listening.
• **Provide in-class learning tasks that are complex and challenge students,** with more than one viable solution strategy. Exploring various solution strategies strengthens students’ ability to distinguish important information and their efficient retrieval of information for a new but similar task.
• **Explain to students that when learning is easy, it is often superficial and soon forgotten. Encourage students to:**
  • test themselves, using text questions, old exams, self-prepared flashcards. Again, this is more effective than re-reading text material or reviewing completed solutions.
  • space out their self-testing. The effort required to remember concepts after forgetting between practice sessions helps to solidify learning.
  • include different problem types in each session. This sharpens students’ ability to distinguish among problem types and apply the correct solution strategies.

References for additional information: