

## 10 - Using Micro-modules and Flipped Classrooms To Standardize the Chemistry and Physics Foundation Knowledge of Year-1 Engineering and Science Students in Biology Courses

Tools / Services	Pedagogical Uses
<p>An online video for Chemistry self-learning (a micromodule)</p> <p>An online video for Physics self-learning (a micromodule)</p> <p>An online problem set for individual self-assessment</p> <p>An in-class Chemistry activity "Sentence Decoding" for group assessment            An in-class Physics activity "Graphic Presentations" for group assessment</p>	<p>Our micromodules comprises 2 online videos, approximately 25 minutes each for Chemistry and Physics, for self-learning. Students are expected to watch the videos, and then attempt an online problem for self-assessment. For the flipped classroom activities, whole class is split into groups, and each is assigned to a senior student, who will follow up on the video content with in-class activities to reinforce students' understanding. These activities include a "Sentence Decoding" game to show the complementarity and universal nature of DNA's base sequence and a "Graphic Presentations" game to visually demonstrate a Physics concept. The online problem set and flipped classroom activities are assessed, and constitute 10% of the overall grade.</p>